Final Report for Menomonee River Area of Concern (AOC) Fish Passage Project

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Introduction

In the Great Lakes Region, there are currently 27 geographic areas listed as Areas of Concern (AOCs), where an area of concern is defined by the U.S.-Canada Great Lakes Water Quality Agreement as "geographic areas designated by the Parties where significant beneficial use impairments (BUI) has occurred as a result of human activities at the local level" (Great Lakes Water Quality Agreement). The Milwaukee Estuary was designated an Area of Concern in 1987, in part due to the loss of fish and wildlife habitat, and degradation of fish and wildlife populations. Factors responsible for degraded habitat, fish and wildlife populations include modifications to wetlands and river habitats from dredging, filling, and bulkheading; and construction of dams and concrete lined channels as barriers to riverine and wetland fish spawning and nursery habitats.

The original boundaries of the Milwaukee Estuary AOC included: the lower 5 kilometers of the Milwaukee River downstream of the North Avenue Dam; the lower 4.8 kilometers of the Menomonee River downstream of 35th Street, the lower 4 kilometers of the Kinnickinnic River downstream of Chase Avenue; the inner and outer harbors of Lake Michigan; and the nearshore waters of Lake Michigan. The boundaries of the AOC were expanded in 2008 to address specific geographic sites that contributed significant loads of contaminated sediments to the estuary (Figure 1).

Between 2000 and 2016, the Milwaukee Metropolitan Sewerage District (MMSD) completed three projects totaling 1.5 kilometers of concrete channel removal and river naturalization projects on the Menomonee River from North 45th Street to an area 500 feet downstream of Interstate-94 (Figure 2). The projects are located within the expanded boundaries of the Milwaukee Estuary AOC. Although the primary impetus for these projects was a desire to repair degrading flood management assets, the projects also eliminated a barrier to migratory fish, opening up 27 kilometers of the Menomonee River (Eggold and Chapman, 2011). The work in the downstream section was funded through the US Army Corps of Engineers (ACOE), and the middle section was funded by the US Environmental Protection Agency (EPA). See Figure 15 for the photograph documentation of the middle section. Each section has different parameters and requirements for monitoring fish passage. The Wisconsin Department of Natural Resources (WDNR) is committed to assisting MMSD in assessing fish passage through the middle section funded by the EPA.

The US EPA Quality Assurance Project Plan (QAPP) called for WDNR to conduct a mark-recapture study beginning in Spring 2017. Successful fish passage is defined by marking fish downstream of the former barrier and recapturing them upstream at a 5% recapture rate or finding the presence of fish species upstream of the former barrier that were previously known to be found only downstream. Such species include golden, shorthead, silver, or greater redhorses; rainbow trout; gizzard shad; walleye; smallmouth bass; channel catfish; yellow bullhead; spotfin shiner; and emerald shiner. The original QAPP called for up to five marking runs conducted downstream of the former concrete channel and up to ten recapture runs upstream during the spring spawning run.

2017 Monitoring Efforts

Methods

Sample Locations and Schedule

The original sampling plan outlined a total of two river sample reaches to be established; one reach upstream and one reach downstream of the concrete river channel and fish passage barrier. The reach downstream of the former fish barrier was to be sampled up to five times, and the reach upstream of the former fish barrier was to be sampled up to 10 times beginning in March or April and ending in May or June to coincide with peak fish spawning runs.

In the spring of 2017, the established sampling reach downstream of the former concrete channel was from upstream of the 35th Street bridge down to 27th Street. Fish were captured and marked in this reach on 3 days in March and April.

Sampling Procedures

The original plan called for sampling using active and passive techniques, where active sampling methods included electrofishing and passive methods included netting. The 2017 marking runs were completed using a boat-mounted, pulsed-DC "mini-boom" electrofishing unit operating from a 4.5m-long Jon boat powered by a 9.9hp outboard motor. The bow-mounted anode was a single 3.5m boom with a "Wisconsin Ring" from which 10 cylindrical, 15 cm-long, 15 mm-diameter stainless steel droppers are suspended. All electrofishing was completed during daylight hours, in a downstream direction, and as close to the shoreline as possible where current breaks and the greatest amount of usable fish cover was located.

Per the original QAPP, all fish captured greater than 254mm (10 inches) in total length were identified to the lowest taxonomic level, counted, and measured for total length to the nearest 1mm; inspected for spawning condition (gonads as green, ripe, or spent), sex; and inspected for external health conditions (deformities, eroded fins, lesions, and tumors). All fish greater than 254mm that were captured downstream of the former concrete channel were also given a uniquely numbered floy tag and a left ventral (LV) fin clip. The unique number provided by each floy tag allows for tracking of each fish individually and thus provides more detail on the movement of individual fish. The external left ventral fin clip allows for quick identification of fish that have already been marked. Fish less than 254mm (10 inches) in total length were not captured or marked because smaller fish may not survive the strain of handling and marking, and because smaller fish are less likely to be mature and therefore less likely to undergo spawning migrations.

Results

Three marking runs were completed in the established downstream reach on March 20th and 29th and April 12th of 2017. A total of 188 fish were captured and marked during these runs (Table 1). Recapture efforts, planned to occur upstream, above the former barrier, were hampered by

consistent rain events and subsequent spikes in stream flow every few days (Figure 3). The Milwaukee area received over 6.2 inches of rain in April; stream shocking was attempted on several occasions but was deemed unsafe due to high stream flows. As a result, no recapture runs were completed.

2018 Monitoring Efforts

Methods

Sample Locations and Schedule

The main downstream reach sampled in 2018 on the Menomonee River was from 27th Street to Selig Drive (Figure 4). This reach was sampled a total of four times beginning in March 2018. The Milwaukee River downstream of the former North Avenue Dam was also sampled a total of four times; fish were captured, tagged, and transferred to the Menomonee River downstream of the former barrier (Figures 5 and 6).

Sampling Procedures

The eight marking runs in 2018 were completed using the active sampling technique of electrofishing. Electrofishing marking runs on the Menomonee River were completed using a boat-mounted, pulsed-DC "mini-boom" electrofishing unit operating from a 4.5m-long Jon boat powered by a 9.9hp outboard motor. The bow-mounted anode was a single 3.5m boom with a "Wisconsin Ring" from which 10 cylindrical, 15 cm-long, 15 mm-diameter stainless steel droppers are suspended. Electrofishing marking runs on the Milwaukee River were completed using a boat-mounted, pulsed-DC "maxi-boom" electrofishing unit operating from a 6.1mm-long boat. The bow-mounted anodes were two booms, each with 0.9m diameter aluminum rings from which 10 cylindrical, 15 mm-diameter stainless steel droppers are suspended. Fish captured and marked on the Milwaukee River were transferred by boat to the Menomonee River (Figure 6).

Due to the likelihood of consistent rain events, potential flood events, and high stream flows hampering recapture efforts for a second year, we opted to use a passive integrated transponder (PIT) tag antenna array to obtain recaptures. Flow conditions during the peak 2018 sampling period were variable due to periodic heavy rain and subsequent high flows (Figure 7). While electrofishing for recaptures would likely have been feasible in early spring, flows on the Menomonee River were consistently high enough to be unsafe after April 14th. Switching our efforts from electrofishing to using the PIT array allowed us to track the movement of fish even during high stream flows, and ultimately led to obtaining more recaptures.

We used an Oregon RFID Multi-Antenna HDX Reader to drive a single antenna (Figure 8). The antenna was constructed using 8-gauge audio cable to create a loop around the river (Figure 9). The cable was placed inside 1" PVC conduit. 20-gauge twinax cable connected the tuner to the reader. Two deep-cycle batteries were used for power. The HDX Reader and batteries were housed in a stainless steel box located on the upper bank (Figure 10). A Palm Pilot was used for initial antenna and reader setup, and a CoolTerm Emulator Program was used to download data from the antenna reader onto a laptop. The PIT array was placed on the Menomonee River in the

reconstructed section on MMSD property downstream of North 45th Street (Figures 11 and 12; GPS coordinates 43.04131, -87.96822). The width of the river at the array site was approximately 9.12 meters. Manufacturer recommendations state that the width should be limited to 10 meters wide and less than 20 meters from the reader, which we met. The array was installed on March 8th, 2018 and removed on June 5th, 2018. Staff downloaded data from the reader onto a laptop twice a week from March through June.

Protocols for marking fish remained similar to the previous year. All fish captured greater than 254mm (10 inches) in total length were identified, counted, and measured for total length to the nearest 1mm; inspected for spawning condition (gonads as green, ripe, or spent), sex; and inspected for external health conditions (deformities, eroded fins, lesions, and tumors). All fish greater than 254mm that were captured downstream of the former concrete channel were marked with a 32mm passive integrated transponder (PIT) tag. These PIT tags effectively replaced floy tags used in the previous year. PIT tags are also uniquely numbered and allow for tracking the movements of individual fish. Half-duplex PIT tags were used as they have a wider detection range than full-duplex PIT tags. Fish marked with PIT tags were also given a left ventral (LV) fin clip for quick external identification. All captured fish were released in the same reach in which they were captured except for the fish captured in the Milwaukee River and released in the Menomonee River downstream of the former barrier.

Results

A total of 525 fish were marked on both the Menomonee River and the Milwaukee River between March 21st and April 12th, 2018 (Table 4). A total of 307 fish were marked on the Menomonee River (Table 2) and 118 fish were marked on the Milwaukee River (Table 3). Except for smallmouth bass, all fish marked averaged over 400mm (15.7 inches) in size. Smallmouth bass averaged 396.8mm (15.6 inches) in size (Tables 5 and 6). Complete biological data recorded for all fish sampled on the Menomonee River and on the Milwaukee River can be found in the appendices (Table A.1 and Table A.2) as well as within the field forms (Table A.4).

Of the 525 total fish marked, a total of 92 individual fish were detected moving through the PIT antenna array; this is a 17.5% recapture rate (Table 7). Of those 92 fish, 82 (89%) were white sucker. Six of the recaptured fish were transferred from the Milwaukee River. These six fish included three golden redhorse, two northern pike, and one smallmouth bass (Table 7). The tables below do not reflect that some of the recaptured fish were detected passing through the array on multiple days, or were detected remaining in the vicinity of the array for several minutes before leaving the area, as only individual recaptured fish are included in the analysis. Complete recorded data for fish detected through the PIT antenna array can be found in the appendices (Table A.3).

Both the quantitative and the qualitative objectives for the study were met. The quantitative objective defined in the original QAPP was as follows: fish collected and marked downstream of the former barrier would be re-captured upstream of the former barrier at a 5% recapture rate. Our recapture rate of 17.5% exceeded the 5% rate originally set. There were two qualitative objectives defined in the original QAPP. The first was the detection of fish species upstream of the former barrier that were previously known to be distributed only downstream of the former

barrier, and the second was recapture of northern pike upstream of the former barrier. Golden redhorse and smallmouth bass are both species previously known to be found only downstream that were detected upstream of the former barrier. While only one northern pike was originally tagged in the Menomonee River, this fish was observed passing through the antenna. Two northern pike transferred from the Milwaukee River were also observed passing through the antenna. Compared to other native migratory fish species, northern pike possess high "burst" swimming speeds over a short distance, but low "sustained" swimming speeds over a long distance (Peake, 2008a and 2008b). The recapture of these fish upstream of the former barrier suggests the completed project will pass other large bodied and mature targeted fish species that possess superior sustained swimming ability. The recapture of white sucker suggests other mature and smaller bodied fish will pass as well.

Discussion

Field Sampling Issues

The use of the PIT antenna array to monitor recaptures was a more effective method than the original proposed technique of electrofishing. Aside from the ability to track fish movements when stream flows were too high for electrofishing to be safe, this also allowed us to track fish at times of the day when we would not be sampling in the field (for example, many fish were detected around the array between the hours of 10:00pm and 6:00am (Appendix A.3).

While there were initial problems with reading the data with a Palm Pilot, the CoolTerm Emulator Program used on a laptop was a reliable method for downloading tag detections from the array. However, we also had initial problems with batteries. The deep-cycle batteries initially installed with the array were old, and thus did not retain a charge for more than 48 hours. This led to increased staff time changing batteries, but also potentially led to missed detections. In at least one case, staff noticed when downloading data after a weekend that the batteries were dead, and the array will not detect and record tags with dead batteries. It is possible that tagged fish moving through the array were missed in that instance. Once new batteries were installed, there were no further issues with the batteries losing a charge before staff could switch batteries. Ideally, either new batteries or solar power should be used to power the array.

Further Recommendations

The array was installed in the river on March 8th, 2018. Ice-out was occurring by mid-February (Figure 13) and by March 18th, water temperatures were already above 40°F (Figure 14). A graph comparing the number of white suckers recaptured through the antenna and stream flows shows white sucker were migrating upstream at stream flows below 150cfs (Figure 14). Two of the northern pike were detected through the array on March 28th and one was detected on March 29th (Table A.3); these dates also corresponded with more white sucker recaptures and lower stream flows (Figure 14). Based on these findings, we would recommend installing the PIT array in the river as soon as possible after ice-out in subsequent sampling years to capture early migrations of fish. We removed the array on June 5th, 2018 and would also recommend leaving the array in the river for a longer period of time, especially because stream flows were still high in early June (Figure 13).

Table 1. Number of fish captured and marked by species in the Menomonee River in March and April 2017.

Species	Number Captured
Northern pike	4
Rainbow trout	18
White sucker	161
Golden redhorse	4
Common carp	1
Total	118

Table 2. Number of fish captured and marked by species in the Menomonee River in March and April 2018.

Species	Number Captured
Northern pike	1
Rainbow trout	29
White sucker	375
Golden redhorse	2

Table 3. Number of fish captured and marked by species in the Milwaukee River in March and April 2018.

Species	Number Captured
Northern pike	14
Rainbow trout	8
Golden redhorse	20
Common carp	2
Brown trout	7
Quillback	3
Silver redhorse	8
Shorthead redhorse	8
Smallmouth bass	12
Walleye	36

Table 4. Number of fish captured and marked by species in both rivers combined in March and April 2018.

Species	Number captured
Northern pike	15
Rainbow trout	37
White sucker	375
Golden redhorse	22
Common carp	2
Brown trout	7
Quillback	3
Silver redhorse	8
Shorthead redhorse	8
Smallmouth bass	12
Walleye	36

Table 5. Average length of captured and marked fish from the Menomonee River.

Species	Average Length (mm)	Average Length (in)
Northern pike*	681	26.8
Rainbow trout	647.6	25.5
White sucker	447.6	17.6
Golden redhorse	421.5	16.6

*Only one northern pike was captured and marked in the Menomonee River.

Table 6. Average length of captured and marked fish from the Milwaukee River.

Species	Average Length (mm)	Average Length (in)
Northern pike	670.6	26.4
Rainbow trout	646.4	25.5
Golden redhorse	404.2	15.9
Common carp	686.5	27.0
Brown trout	525.3	20.7
Quillback	465.3	18.3
Silver redhorse	519.0	20.4
Shorthead redhorse	426.4	16.8
Smallmouth bass	396.8	15.6
Walleye	554.9	21.9

Table 7. Number of fish detected through the PIT antenna by species.

Species	Number recaptured
Northern pike	3
Rainbow trout	3
White sucker	82
Golden redhorse	3
Smallmouth bass	1

Figure 1. Milwaukee Estuary Area of Concern (AOC) boundaries, where the red lines denote the original boundaries established in 1987 and the yellow lines denote the expanded boundaries established in 2008.

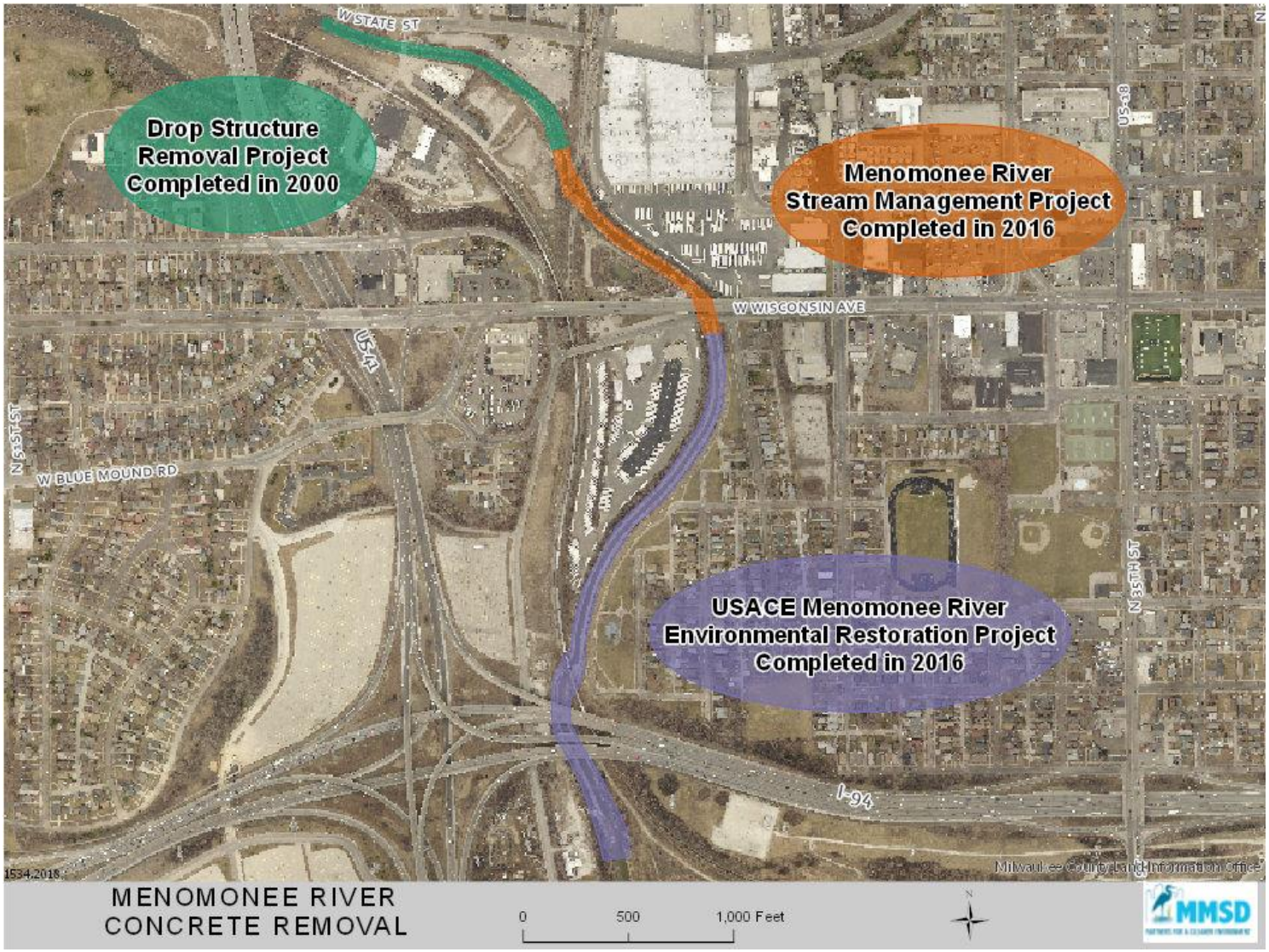

Figure 2. Menomonee River Concrete Removal Timelines.

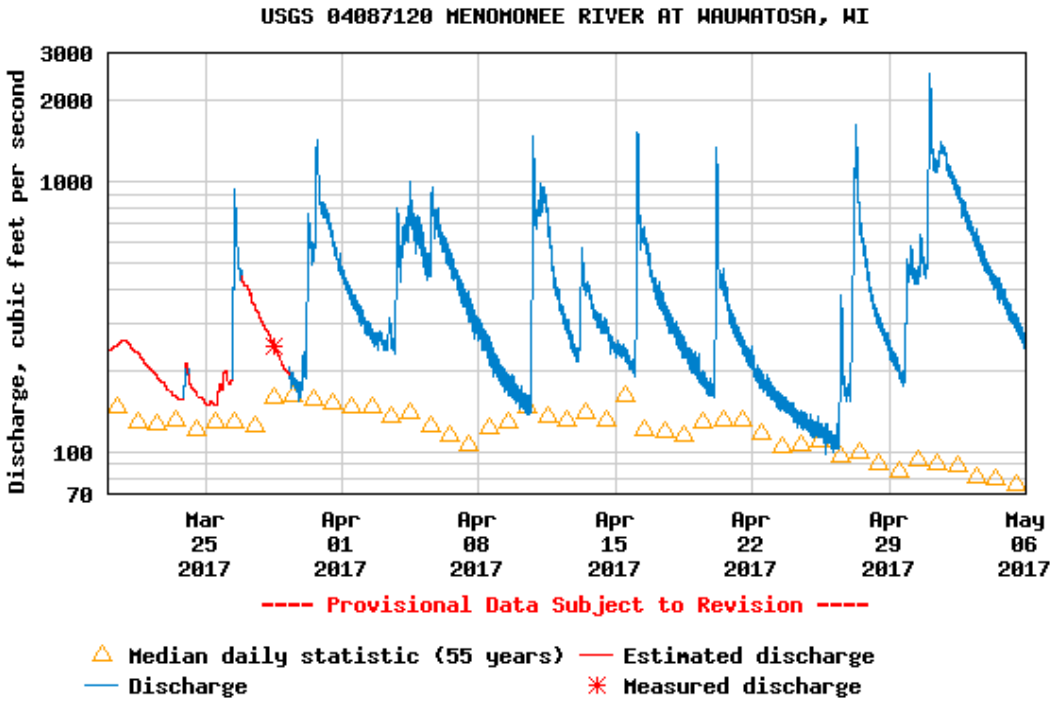

Figure 3. Menomonee River discharge data from March 20th to May 5th, 2017. Graph courtesy of the U.S. Geological Survey.

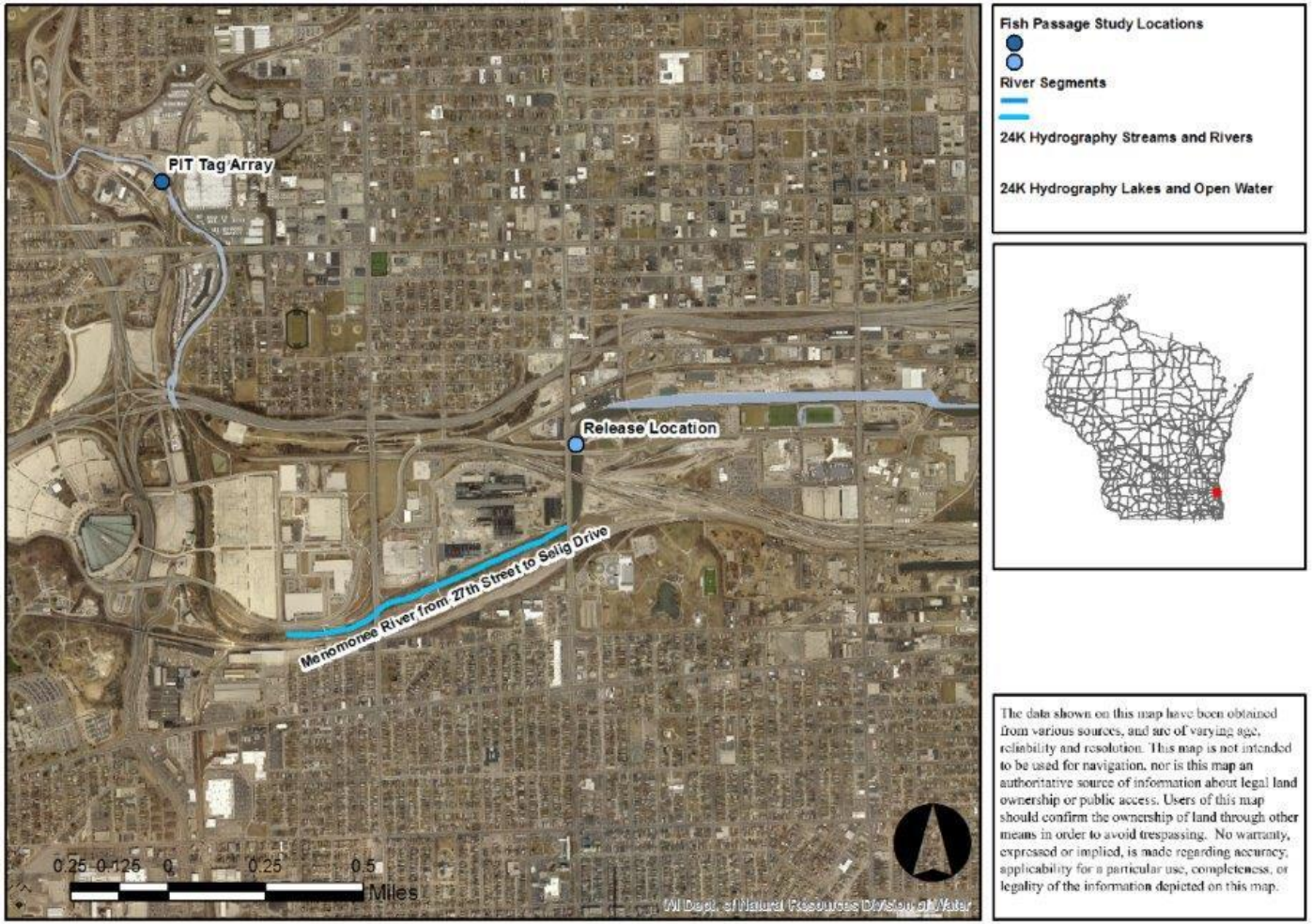

Figure 4. Stretch of the Menomonee River sampled from 27th Street to Selig Drive.

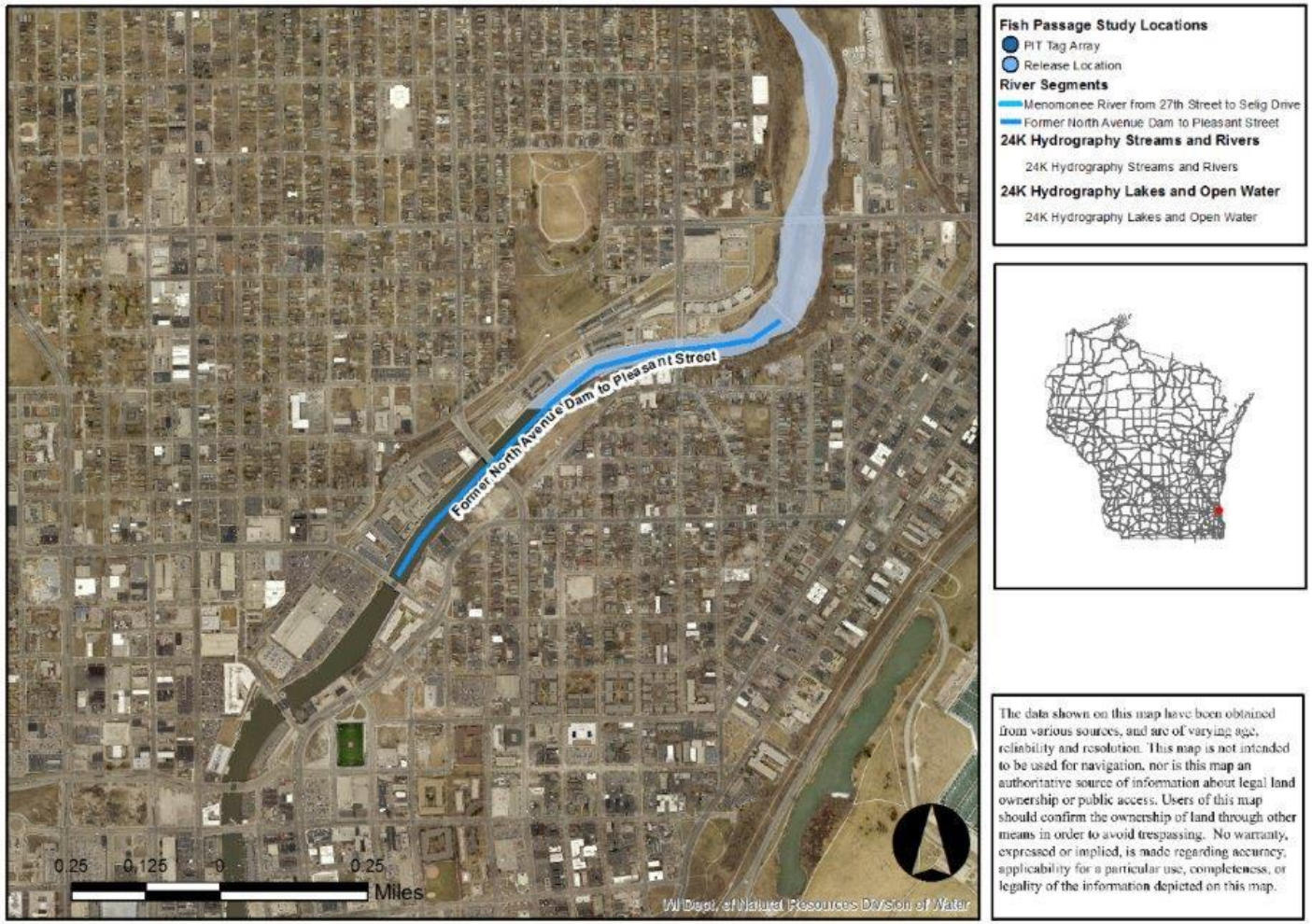

Figure 5. Stretch of the Milwaukee River sampled from below the former North Avenue Dam to East Pleasant Street.

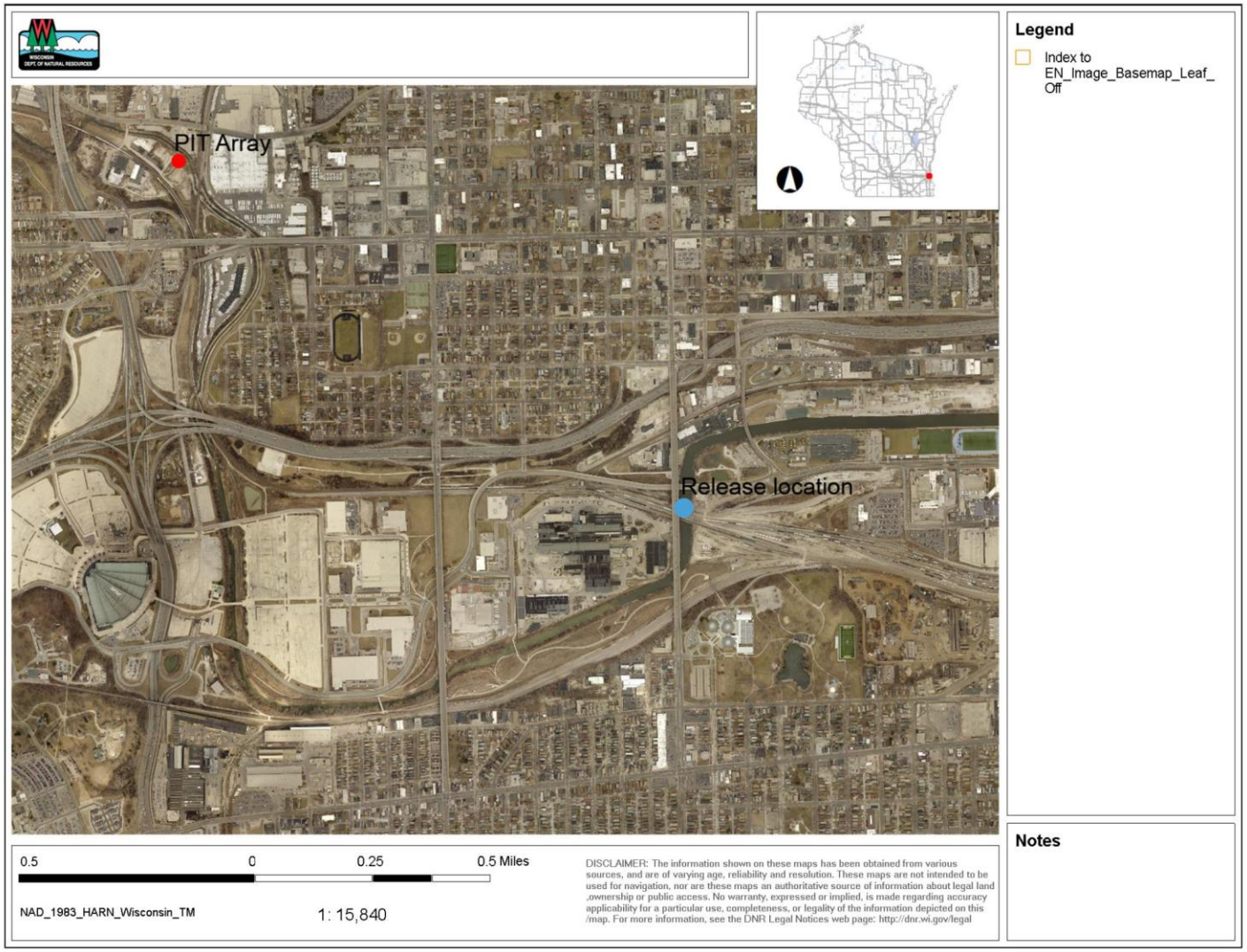

Figure 6. Release location of fish transferred from the Milwaukee River to the Menomonee River (blue dot) and location of the PIT tag array upstream (red dot).

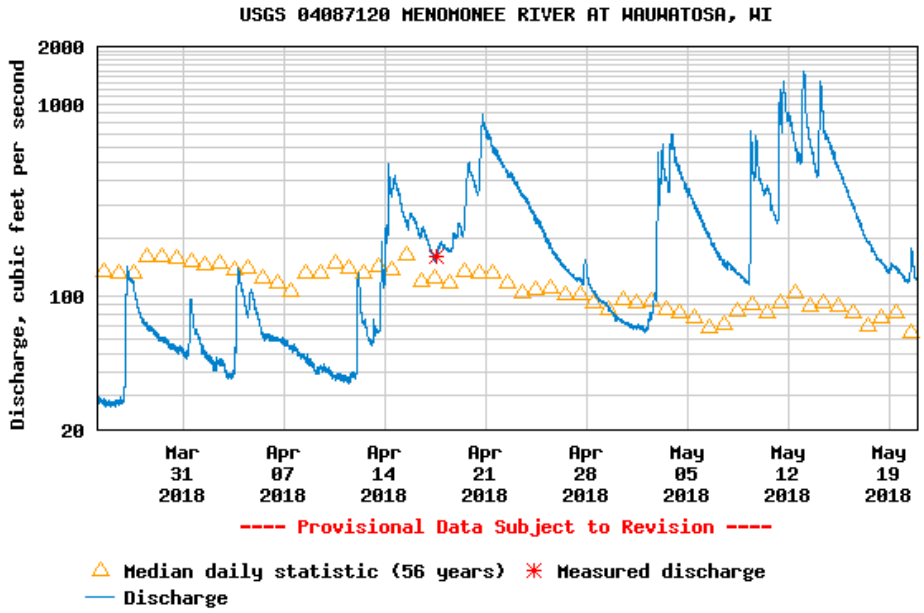

Figure 7. Menomonee River discharge data from March 25th to May 20th, 2018. Graph courtesy of the U.S. Geological Survey.

Figure 8. Oregon RFID Multi-Antenna PIT tag reader.

Figure 9. Installed antenna array in the Menomonee River.

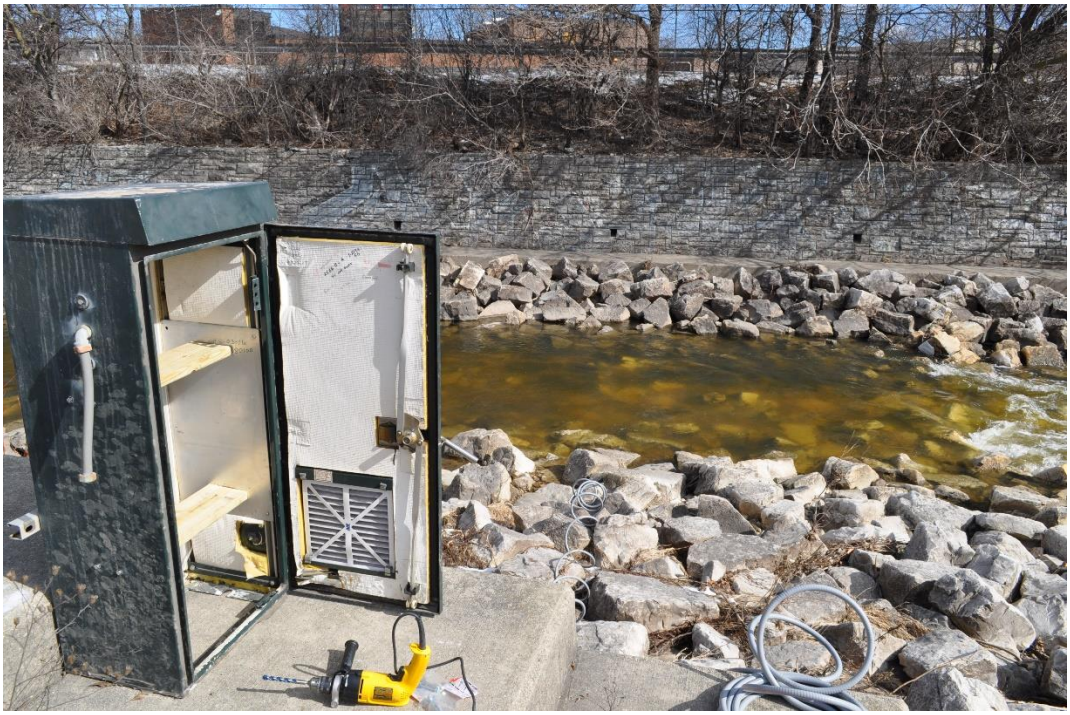

Figure 10. MMSD-provided stainless steel box where the antenna reader and batteries were stored for security and weather protection.

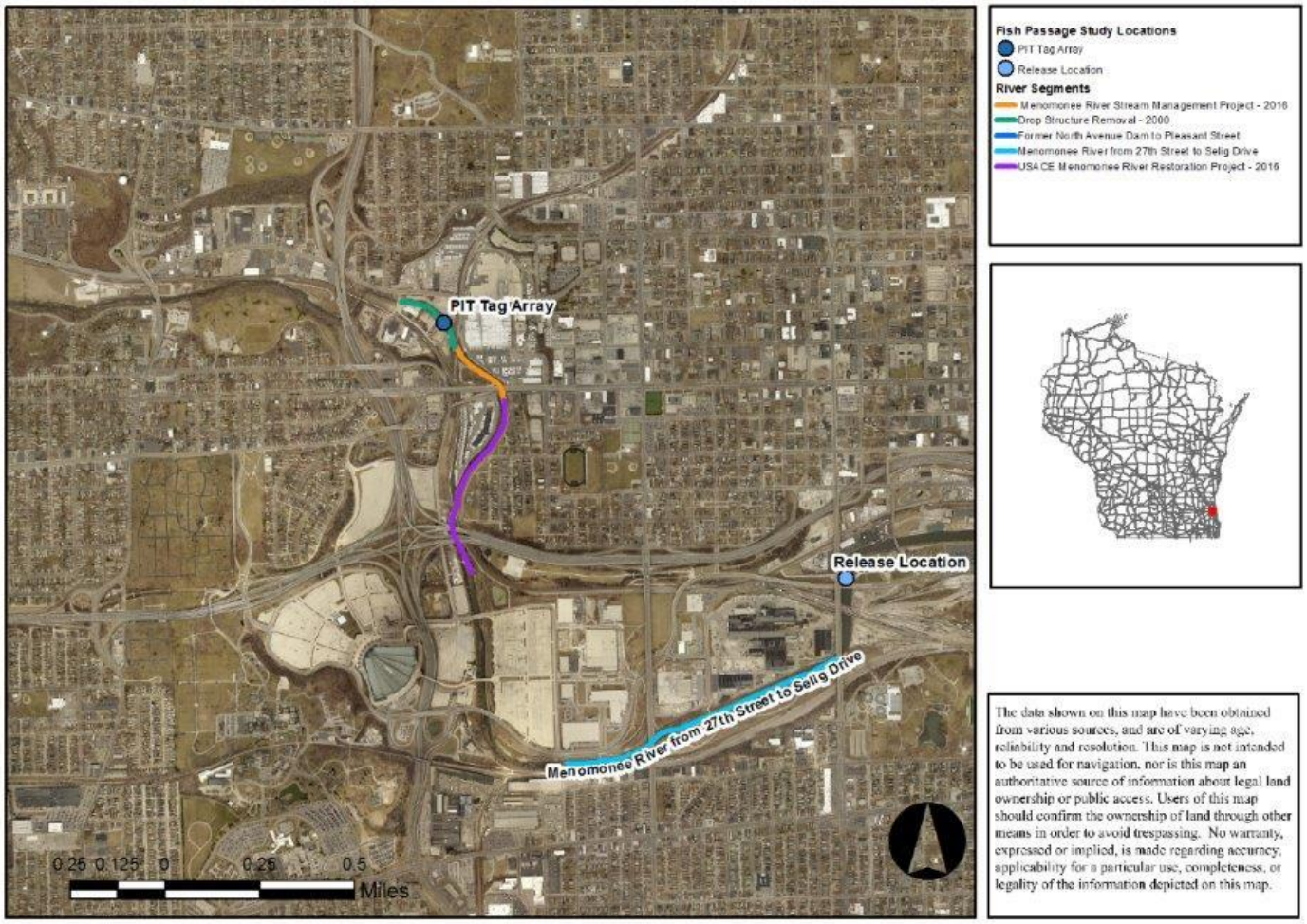

Figure 11. Location of the PIT antenna array.

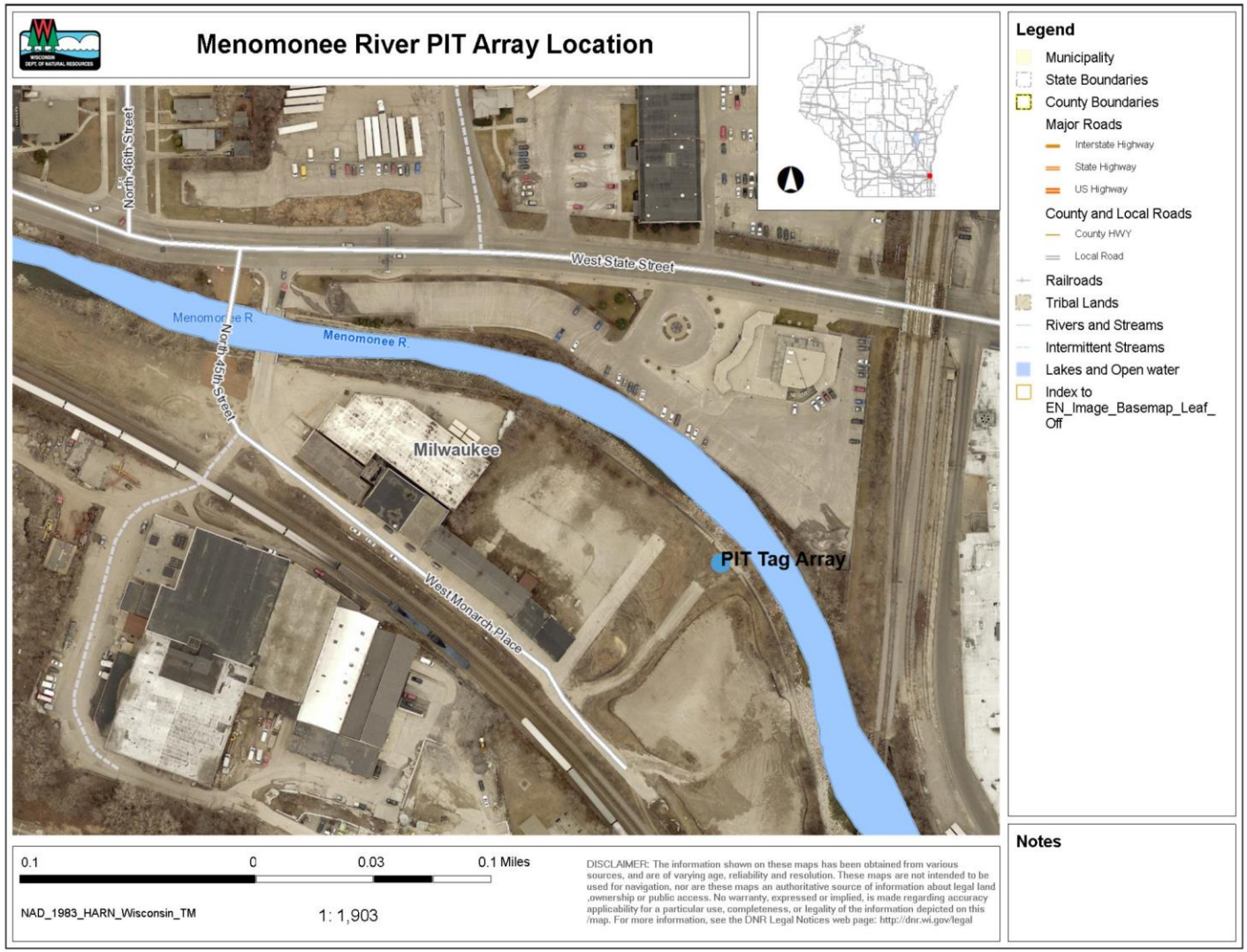

Figure 12. Location of the PIT antenna array.

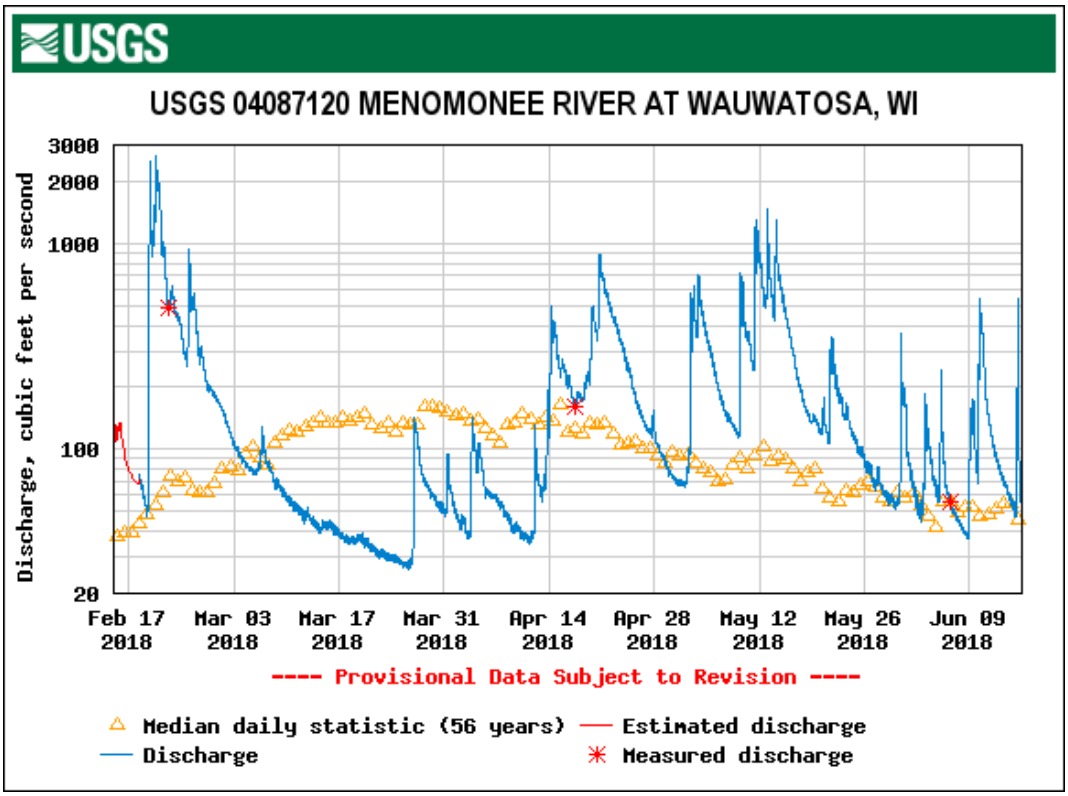

Figure 13. Menomonee River discharge data from February 17th to June 19th, 2018. Graph courtesy of the U.S. Geological Survey.

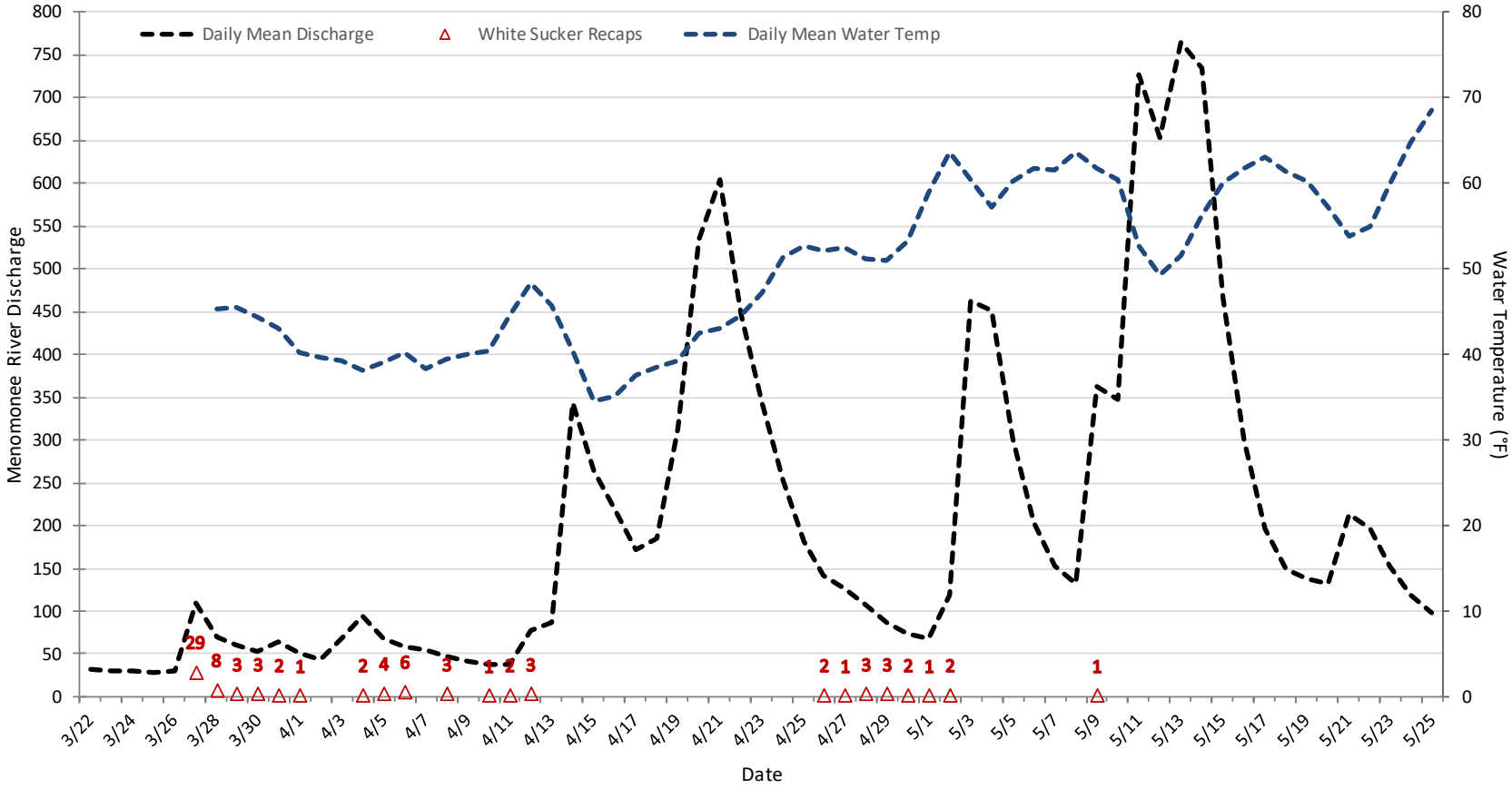

Figure 14. Menomonee River discharge (cfs), water temperature (°F), and number of white sucker detected through the PIT array by recapture date.

References

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U.S. Geological Survey, National Water Information System: Web Interface. https://waterdata.usgs.gov/wi/nwis

Appendix

Table A.1. Biological data from all fish marked on the Menomonee River from March 21st through April 5th, 2018. PIT tag prefix: 9002300000.

Catch Location	Date	Species	Length (mm)	Length (inches)	Sex	Sex Condition	PIT Tag Number
Menomonee River	3/21/2018	Rainbow Trout	590	23.23	Not Examined	Not Examined	63104
Menomonee River	3/21/2018	Rainbow Trout	650	25.59	Not Examined	Not Examined	63107
Menomonee River	3/21/2018	Rainbow Trout	757	29.80	Not Examined	Not Examined	63112
Menomonee River	3/21/2018	Rainbow Trout	785	30.91	Not Examined	Not Examined	63146
Menomonee River	3/21/2018	Rainbow Trout	725	28.54	Not Examined	Not Examined	63148
Menomonee River	3/21/2018	Rainbow Trout	774	30.47	Not Examined	Not Examined	63153
Menomonee River	3/21/2018	Rainbow Trout	732	28.82	Not Examined	Not Examined	63158
Menomonee River	3/21/2018	Rainbow Trout	690	27.17	Not Examined	Not Examined	63161
Menomonee River	3/21/2018	Rainbow Trout	751	29.57	Not Examined	Not Examined	72070
Menomonee River	3/21/2018	Rainbow Trout	702	27.64	Not Examined	Not Examined	72074
Menomonee River	3/21/2018	Rainbow Trout	464	18.27	Not Examined	Not Examined	72078
Menomonee River	3/21/2018	Rainbow Trout	683	26.89	Not Examined	Not Examined	72084
Menomonee River	3/21/2018	Rainbow Trout	647	25.47	Not Examined	Not Examined	72087
Menomonee River	3/21/2018	Rainbow Trout	776	30.55	Not Examined	Not Examined	72095
Menomonee River	3/21/2018	White Sucker	455	17.91	Not Examined	Not Examined	63105
Menomonee River	3/21/2018	White Sucker	432	17.01	Not Examined	Not Examined	63106
Menomonee River	3/21/2018	White Sucker	532	20.94	Not Examined	Not Examined	63108
Menomonee River	3/21/2018	White Sucker	392	15.43	Not Examined	Not Examined	63109
Menomonee River	3/21/2018	White Sucker	421	16.57	Not Examined	Not Examined	63111
Menomonee River	3/21/2018	White Sucker	462	18.19	Not Examined	Not Examined	63143
Menomonee River	3/21/2018	White Sucker	422	16.61	Not Examined	Not Examined	63144
Menomonee River	3/21/2018	White Sucker	430	16.93	Not Examined	Not Examined	63145
Menomonee River	3/21/2018	White Sucker	461	18.15	Not Examined	Not Examined	63149
Menomonee River	3/21/2018	White Sucker	443	17.44	Not Examined	Not Examined	63150
Menomonee River	3/21/2018	White Sucker	409	16.10	Not Examined	Not Examined	63151
Menomonee River	3/21/2018	White Sucker	448	17.64	Not Examined	Not Examined	63152
Menomonee River	3/21/2018	White Sucker	490	19.29	Not Examined	Not Examined	63154
Menomonee River	3/21/2018	White Sucker	498	19.61	Not Examined	Not Examined	63155
Menomonee River	3/21/2018	White Sucker	487	19.17	Not Examined	Not Examined	63156
Menomonee River	3/21/2018	White Sucker	441	17.36	Not Examined	Not Examined	63163
Menomonee River	3/21/2018	White Sucker	433	17.05	Not Examined	Not Examined	63165
Menomonee River	3/21/2018	White Sucker	422	16.61	Not Examined	Not Examined	63166
Menomonee River	3/21/2018	White Sucker	502	19.76	Not Examined	Not Examined	63170
Menomonee River	3/21/2018	White Sucker	350	13.78	Not Examined	Not Examined	63176
Menomonee River	3/21/2018	White Sucker	444	17.48	Not Examined	Not Examined	63177
Menomonee River	3/21/2018	White Sucker	412	16.22	Not Examined	Not Examined	63178
Menomonee River	3/21/2018	White Sucker	364	14.33	Not Examined	Not Examined	63186
Menomonee River	3/21/2018	White Sucker	421	16.57	Not Examined	Not Examined	72075
Menomonee River	3/21/2018	White Sucker	465	18.31	Not Examined	Not Examined	72079

Menomonee River	3/21/2018	White Sucker	443	17.44	Not Examined	Not Examined	72086
Menomonee River	3/21/2018	White Sucker	454	17.87	Not Examined	Not Examined	72091
Menomonee River	3/22/2018	Rainbow Trout	733	28.86	Not Examined	Not Examined	63253
Menomonee River	3/22/2018	Rainbow Trout	463	18.23	Not Examined	Not Examined	63257
Menomonee River	3/22/2018	Rainbow Trout	570	22.44	Not Examined	Not Examined	63278
Menomonee River	3/22/2018	Rainbow Trout	445	17.52	Not Examined	Not Examined	63281
Menomonee River	3/22/2018	Rainbow Trout	803	31.61	Not Examined	Not Examined	63284
Menomonee River	3/22/2018	Rainbow Trout	728	28.66	Not Examined	Not Examined	63299
Menomonee River	3/22/2018	Rainbow Trout	756	29.76	Not Examined	Not Examined	63300
Menomonee River	3/22/2018	Rainbow Trout	657	25.87	Not Examined	Not Examined	63328
Menomonee River	3/22/2018	Rainbow Trout	700	27.56	Not Examined	Not Examined	63338
Menomonee River	3/22/2018	Rainbow Trout	607	23.90	Not Examined	Not Examined	63351
Menomonee River	3/22/2018	Rainbow Trout	471	18.54	Not Examined	Not Examined	72042
Menomonee River	3/22/2018	Rainbow Trout	519	20.43	Not Examined	Not Examined	72047
Menomonee River	3/22/2018	Rainbow Trout	430	16.93	Not Examined	Not Examined	72057
Menomonee River	3/22/2018	Northern Pike	681	26.81	Not Examined	Not Examined	63382
Menomonee River	3/22/2018	White Sucker	444	17.48	Not Examined	Not Examined	63244
Menomonee River	3/22/2018	White Sucker	504	19.84	Not Examined	Not Examined	63247
Menomonee River	3/22/2018	White Sucker	505	19.88	Not Examined	Not Examined	63248
Menomonee River	3/22/2018	White Sucker	473	18.62	Not Examined	Not Examined	63249
Menomonee River	3/22/2018	White Sucker	481	18.94	Not Examined	Not Examined	63250
Menomonee River	3/22/2018	White Sucker	480	18.90	Not Examined	Not Examined	63251
Menomonee River	3/22/2018	White Sucker	427	16.81	Not Examined	Not Examined	63255
Menomonee River	3/22/2018	White Sucker	382	15.04	Not Examined	Not Examined	63256
Menomonee River	3/22/2018	White Sucker	464	18.27	Not Examined	Not Examined	63277
Menomonee River	3/22/2018	White Sucker	396	15.59	Not Examined	Not Examined	63279
Menomonee River	3/22/2018	White Sucker	468	18.43	Not Examined	Not Examined	63280
Menomonee River	3/22/2018	White Sucker	419	16.50	Not Examined	Not Examined	63282
Menomonee River	3/22/2018	White Sucker	417	16.42	Not Examined	Not Examined	63283
Menomonee River	3/22/2018	White Sucker	438	17.24	Not Examined	Not Examined	63285
Menomonee River	3/22/2018	White Sucker	401	15.79	Not Examined	Not Examined	63286
Menomonee River	3/22/2018	White Sucker	424	16.69	Not Examined	Not Examined	63287
Menomonee River	3/22/2018	White Sucker	512	20.16	Not Examined	Not Examined	63291
Menomonee River	3/22/2018	White Sucker	423	16.65	Not Examined	Not Examined	63301
Menomonee River	3/22/2018	White Sucker	473	18.62	Not Examined	Not Examined	63340
Menomonee River	3/22/2018	White Sucker	361	14.21	Not Examined	Not Examined	63345
Menomonee River	3/22/2018	White Sucker	500	19.69	Not Examined	Not Examined	63373
Menomonee River	3/22/2018	White Sucker	491	19.33	Not Examined	Not Examined	63379
Menomonee River	3/22/2018	White Sucker	480	18.90	Not Examined	Not Examined	63383
Menomonee River	3/22/2018	White Sucker	396	15.59	Not Examined	Not Examined	63384
Menomonee River	3/22/2018	White Sucker	403	15.87	Not Examined	Not Examined	63387
Menomonee River	3/22/2018	White Sucker	405	15.94	Not Examined	Not Examined	63390
Menomonee River	3/22/2018	White Sucker	528	20.79	Not Examined	Not Examined	72022
Menomonee River	3/22/2018	White Sucker	450	17.72	Not Examined	Not Examined	72033
Menomonee River	3/22/2018	White Sucker	398	15.67	Not Examined	Not Examined	72034
Menomonee River	3/22/2018	White Sucker	466	18.35	Not Examined	Not Examined	72035
Menomonee River	3/22/2018	White Sucker	446	17.56	Not Examined	Not Examined	72036

Menomonee River	3/22/2018	White Sucker	498	19.61	Not Examined	Not Examined	72037
Menomonee River	3/22/2018	White Sucker	498	19.61	Not Examined	Not Examined	72038
Menomonee River	3/22/2018	White Sucker	383	15.08	Not Examined	Not Examined	72039
Menomonee River	3/22/2018	White Sucker	434	17.09	Not Examined	Not Examined	72040
Menomonee River	3/22/2018	White Sucker	440	17.32	Not Examined	Not Examined	72041
Menomonee River	3/22/2018	White Sucker	497	19.57	Not Examined	Not Examined	72043
Menomonee River	3/22/2018	White Sucker	452	17.80	Not Examined	Not Examined	72044
Menomonee River	3/22/2018	White Sucker	509	20.04	Not Examined	Not Examined	72045
Menomonee River	3/22/2018	White Sucker	408	16.06	Not Examined	Not Examined	72046
Menomonee River	3/22/2018	White Sucker	382	15.04	Not Examined	Not Examined	72049
Menomonee River	3/22/2018	White Sucker	457	17.99	Not Examined	Not Examined	72050
Menomonee River	3/22/2018	White Sucker	525	20.67	Not Examined	Not Examined	72051
Menomonee River	3/22/2018	White Sucker	406	15.98	Not Examined	Not Examined	72052
Menomonee River	3/22/2018	White Sucker	457	17.99	Not Examined	Not Examined	72053
Menomonee River	3/22/2018	White Sucker	452	17.80	Not Examined	Not Examined	72054
Menomonee River	3/22/2018	White Sucker	469	18.46	Not Examined	Not Examined	72055
Menomonee River	3/22/2018	White Sucker	486	19.13	Not Examined	Not Examined	72056
Menomonee River	3/22/2018	White Sucker	436	17.17	Not Examined	Not Examined	72058
Menomonee River	3/22/2018	White Sucker	550	21.65	Not Examined	Not Examined	72059
Menomonee River	3/22/2018	White Sucker	423	16.65	Not Examined	Not Examined	72060
Menomonee River	3/22/2018	White Sucker	450	17.72	Not Examined	Not Examined	72064
Menomonee River	3/22/2018	White Sucker	458	18.03	Not Examined	Not Examined	72065
Menomonee River	3/22/2018	White Sucker	458	18.03	Not Examined	Not Examined	72071
Menomonee River	3/22/2018	Golden Redhorse	426	16.77	Not Examined	Not Examined	63270
Menomonee River	3/28/2018	Rainbow Trout	715	28.15	Female	Ripe	63455
Menomonee River	3/28/2018	Rainbow Trout	456	17.95	Male	Ripe	63472
Menomonee River	3/28/2018	White Sucker	545	21.46	Female	Green	63103
Menomonee River	3/28/2018	White Sucker	466	18.35	Male	Ripe	63110
Menomonee River	3/28/2018	White Sucker	416	16.38	Male	Ripe	63113
Menomonee River	3/28/2018	White Sucker	522	20.55	Female	Green	63114
Menomonee River	3/28/2018	White Sucker	502	19.76	Female	Green	63115
Menomonee River	3/28/2018	White Sucker	481	18.94	Female	Green	63116
Menomonee River	3/28/2018	White Sucker	488	19.21	Female	Green	63117
Menomonee River	3/28/2018	White Sucker	412	16.22	Male	Ripe	63118
Menomonee River	3/28/2018	White Sucker	404	15.91	Female	Green	63119
Menomonee River	3/28/2018	White Sucker	404	15.91	Female	Green	63120
Menomonee River	3/28/2018	White Sucker	484	19.06	Male	Ripe	63121
Menomonee River	3/28/2018	White Sucker	366	14.41	Male	Ripe	63122
Menomonee River	3/28/2018	White Sucker	405	15.94	Male	Ripe	63123
Menomonee River	3/28/2018	White Sucker	439	17.28	Female	Green	63124
Menomonee River	3/28/2018	White Sucker	451	17.76	Male	Ripe	63126
Menomonee River	3/28/2018	White Sucker	474	18.66	Female	Green	63128
Menomonee River	3/28/2018	White Sucker	463	18.23	Male	Ripe	63129
Menomonee River	3/28/2018	White Sucker	448	17.64	Male	Ripe	63131
Menomonee River	3/28/2018	White Sucker	485	19.09	Female	Green	63132
Menomonee River	3/28/2018	White Sucker	470	18.50	Female	Green	63133
Menomonee River	3/28/2018	White Sucker	430	16.93	Male	Spent	63137

Menomonee River	3/28/2018	White Sucker	425	16.73	Female	Green	63138
Menomonee River	3/28/2018	White Sucker	493	19.41	Female	Green	63139
Menomonee River	3/28/2018	White Sucker	397	15.63	Female	Green	63141
Menomonee River	3/28/2018	White Sucker	410	16.14	Female	Green	63142
Menomonee River	3/28/2018	White Sucker	403	15.87	Male	Ripe	63157
Menomonee River	3/28/2018	White Sucker	395	15.55	Male	Ripe	63159
Menomonee River	3/28/2018	White Sucker	485	19.09	Female	Green	63160
Menomonee River	3/28/2018	White Sucker	435	17.13	Male	Ripe	63169
Menomonee River	3/28/2018	White Sucker	405	15.94	Male	Ripe	63174
Menomonee River	3/28/2018	White Sucker	450	17.72	Female	Green	63182
Menomonee River	3/28/2018	White Sucker	409	16.10	Male	Ripe	63198
Menomonee River	3/28/2018	White Sucker	502	19.76	Female	Green	63205
Menomonee River	3/28/2018	White Sucker	489	19.25	Female	Green	63206
Menomonee River	3/28/2018	White Sucker	483	19.02	Female	Green	63220
Menomonee River	3/28/2018	White Sucker	480	18.90	Female	Green	63226
Menomonee River	3/28/2018	White Sucker	385	15.16	Female	Green	63228
Menomonee River	3/28/2018	White Sucker	394	15.51	Male	Ripe	63230
Menomonee River	3/28/2018	White Sucker	524	20.63	Unknown	Unknown	63233
Menomonee River	3/28/2018	White Sucker	417	16.42	Unknown	Unknown	63234
Menomonee River	3/28/2018	White Sucker	492	19.37	Unknown	Unknown	63235
Menomonee River	3/28/2018	White Sucker	395	15.55	Male	Ripe	63236
Menomonee River	3/28/2018	White Sucker	412	16.22	Male	Ripe	63237
Menomonee River	3/28/2018	White Sucker	414	16.30	Male	Green	63239
Menomonee River	3/28/2018	White Sucker	483	19.02	Unknown	Unknown	63240
Menomonee River	3/28/2018	White Sucker	420	16.54	Male	Ripe	63242
Menomonee River	3/28/2018	White Sucker	386	15.20	Male	Unknown	63243
Menomonee River	3/28/2018	White Sucker	489	19.25	Unknown	Unknown	63252
Menomonee River	3/28/2018	White Sucker	533	20.98	Female	Green	63254
Menomonee River	3/28/2018	White Sucker	512	20.16	Unknown	Unknown	63258
Menomonee River	3/28/2018	White Sucker	444	17.48	Male	Unknown	63260
Menomonee River	3/28/2018	White Sucker	453	17.83	Unknown	Unknown	63261
Menomonee River	3/28/2018	White Sucker	492	19.37	Unknown	Unknown	63262
Menomonee River	3/28/2018	White Sucker	490	19.29	Not Examined	Not Examined	63264
Menomonee River	3/28/2018	White Sucker	435	17.13	Male	Unknown	63265
Menomonee River	3/28/2018	White Sucker	481	18.94	Unknown	Unknown	63266
Menomonee River	3/28/2018	White Sucker	518	20.39	Unknown	Unknown	63268
Menomonee River	3/28/2018	White Sucker	457	17.99	Female	Green	63271
Menomonee River	3/28/2018	White Sucker	537	21.14	Unknown	Unknown	63274
Menomonee River	3/28/2018	White Sucker	425	16.73	Male	Ripe	63391
Menomonee River	3/28/2018	White Sucker	523	20.59	Female	Green	63392
Menomonee River	3/28/2018	White Sucker	484	19.06	Female	Green	63393
Menomonee River	3/28/2018	White Sucker	404	15.91	Male	Ripe	63394
Menomonee River	3/28/2018	White Sucker	470	18.50	Male	Green	63395
Menomonee River	3/28/2018	White Sucker	438	17.24	Male	Green	63396
Menomonee River	3/28/2018	White Sucker	450	17.72	Female	Green	63397
Menomonee River	3/28/2018	White Sucker	503	19.80	Female	Green	63398
Menomonee River	3/28/2018	White Sucker	532	20.94	Female	Green	63399

Menomonee River	3/28/2018	White Sucker	479	18.86	Female	Green	63400
Menomonee River	3/28/2018	White Sucker	497	19.57	Female	Green	63401
Menomonee River	3/28/2018	White Sucker	460	18.11	Male	Spent	63402
Menomonee River	3/28/2018	White Sucker	448	17.64	Male	Ripe	63403
Menomonee River	3/28/2018	White Sucker	402	15.83	Female	Green	63404
Menomonee River	3/28/2018	White Sucker	454	17.87	Male	Ripe	63405
Menomonee River	3/28/2018	White Sucker	492	19.37	Female	Green	63406
Menomonee River	3/28/2018	White Sucker	444	17.48	Male	Green	63407
Menomonee River	3/28/2018	White Sucker	368	14.49	Male	Ripe	63408
Menomonee River	3/28/2018	White Sucker	400	15.75	Male	Ripe	63409
Menomonee River	3/28/2018	White Sucker	505	19.88	Female	Green	63410
Menomonee River	3/28/2018	White Sucker	440	17.32	Male	Ripe	63411
Menomonee River	3/28/2018	White Sucker	491	19.33	Female	Green	63412
Menomonee River	3/28/2018	White Sucker	424	16.69	Male	Green	63413
Menomonee River	3/28/2018	White Sucker	394	15.51	Female	Green	63416
Menomonee River	3/28/2018	White Sucker	508	20.00	Female	Green	63417
Menomonee River	3/28/2018	White Sucker	468	18.43	Female	Green	63419
Menomonee River	3/28/2018	White Sucker	403	15.87	Male	Ripe	63430
Menomonee River	3/28/2018	White Sucker	422	16.61	Male	Green	63434
Menomonee River	3/28/2018	White Sucker	510	20.08	Female	Green	63439
Menomonee River	3/28/2018	White Sucker	383	15.08	Female	Green	63442
Menomonee River	3/28/2018	White Sucker	456	17.95	Unknown	Unknown	63445
Menomonee River	3/28/2018	White Sucker	533	20.98	Female	Spent	63446
Menomonee River	3/28/2018	White Sucker	511	20.12	Female	Green	63448
Menomonee River	3/28/2018	White Sucker	430	16.93	Female	Ripe	63450
Menomonee River	3/28/2018	White Sucker	515	20.28	Female	Ripe	63451
Menomonee River	3/28/2018	White Sucker	420	16.54	Male	Ripe	63453
Menomonee River	3/28/2018	White Sucker	470	18.50	Female	Green	63454
Menomonee River	3/28/2018	White Sucker	442	17.40	Male	Ripe	63456
Menomonee River	3/28/2018	White Sucker	500	19.69	Unknown	Unknown	63457
Menomonee River	3/28/2018	White Sucker	475	18.70	Male	Ripe	63458
Menomonee River	3/28/2018	White Sucker	485	19.09	Female	Ripe	63460
Menomonee River	3/28/2018	White Sucker	430	16.93	Male	Ripe	63461
Menomonee River	3/28/2018	White Sucker	420	16.54	Male	Ripe	63465
Menomonee River	3/28/2018	White Sucker	465	18.31	Female	Green	63466
Menomonee River	3/28/2018	White Sucker	441	17.36	Male	Green	63468
Menomonee River	3/28/2018	White Sucker	450	17.72	Male	Ripe	63469
Menomonee River	3/28/2018	White Sucker	410	16.14	Male	Ripe	63470
Menomonee River	3/28/2018	White Sucker	461	18.15	Female	Green	63473
Menomonee River	3/28/2018	White Sucker	452	17.80	Unknown	Unknown	63475
Menomonee River	3/28/2018	White Sucker	452	17.80	Female	Green	63476
Menomonee River	3/28/2018	White Sucker	464	18.27	Unknown	Unknown	63479
Menomonee River	3/28/2018	White Sucker	500	19.69	Female	Green	63481
Menomonee River	3/28/2018	White Sucker	370	14.57	Male	Ripe	63483
Menomonee River	3/28/2018	White Sucker	480	18.90	Female	Green	63484
Menomonee River	3/28/2018	White Sucker	428	16.85	Male	Ripe	63485
Menomonee River	3/28/2018	White Sucker	469	18.46	Female	Green	63486

Menomonee River	3/28/2018	White Sucker	360	14.17	Male	Ripe	63488
Menomonee River	3/28/2018	White Sucker	440	17.32	Male	Ripe	63489
Menomonee River	3/28/2018	White Sucker	400	15.75	Male	Ripe	63490
Menomonee River	3/28/2018	White Sucker	367	14.45	Male	Ripe	63491
Menomonee River	3/28/2018	White Sucker	399	15.71	Male	Ripe	63492
Menomonee River	3/28/2018	White Sucker	388	15.28	Male	Ripe	63517
Menomonee River	3/28/2018	White Sucker	418	16.46	Male	Ripe	63518
Menomonee River	3/28/2018	White Sucker	517	20.35	Female	Green	63520
Menomonee River	3/28/2018	White Sucker	362	14.25	Male	Green	63521
Menomonee River	3/28/2018	White Sucker	425	16.73	Female	Green	63522
Menomonee River	3/28/2018	White Sucker	450	17.72	Female	Green	63524
Menomonee River	3/28/2018	White Sucker	521	20.51	Female	Green	63525
Menomonee River	3/28/2018	White Sucker	471	18.54	Male	Ripe	63526
Menomonee River	3/28/2018	White Sucker	470	18.50	Female	Green	63527
Menomonee River	3/28/2018	White Sucker	393	15.47	Male	Ripe	63528
Menomonee River	3/28/2018	White Sucker	496	19.53	Female	Green	63529
Menomonee River	3/28/2018	White Sucker	405	15.94	Female	Green	63530
Menomonee River	3/28/2018	White Sucker	456	17.95	Male	Ripe	63531
Menomonee River	3/28/2018	White Sucker	485	19.09	Male	Green	63532
Menomonee River	3/28/2018	White Sucker	382	15.04	Male	Ripe	63533
Menomonee River	3/28/2018	White Sucker	466	18.35	Female	Green	63534
Menomonee River	3/28/2018	White Sucker	421	16.57	Male	Ripe	63535
Menomonee River	3/28/2018	White Sucker	513	20.20	Female	Green	63536
Menomonee River	3/28/2018	White Sucker	461	18.15	Female	Green	63537
Menomonee River	3/28/2018	White Sucker	526	20.71	Female	Green	63538
Menomonee River	3/28/2018	White Sucker	478	18.82	Female	Green	63539
Menomonee River	3/28/2018	White Sucker	511	20.12	Female	Green	63540
Menomonee River	3/28/2018	White Sucker	440	17.32	Male	Ripe	63541
Menomonee River	3/28/2018	White Sucker	409	16.10	Male	Ripe	63542
Menomonee River	3/28/2018	White Sucker	465	18.31	Female	Green	63543
Menomonee River	3/28/2018	White Sucker	475	18.70	Female	Green	63544
Menomonee River	3/28/2018	White Sucker	472	18.58	Female	Green	63545
Menomonee River	3/28/2018	White Sucker	421	16.57	Male	Spent	63546
Menomonee River	3/28/2018	White Sucker	412	16.22	Male	Green	63547
Menomonee River	3/28/2018	White Sucker	350	13.78	Male	Ripe	63580
Menomonee River	3/28/2018	White Sucker	358	14.09	Male	Ripe	63581
Menomonee River	3/28/2018	White Sucker	386	15.20	Male	Ripe	63582
Menomonee River	3/28/2018	White Sucker	345	13.58	Female	Green	63583
Menomonee River	3/28/2018	White Sucker	466	18.35	Female	Green	63584
Menomonee River	3/28/2018	White Sucker	457	17.99	Female	Green	63585
Menomonee River	3/28/2018	White Sucker	530	20.87	Female	Green	63586
Menomonee River	3/28/2018	White Sucker	370	14.57	Male	Ripe	63587
Menomonee River	3/28/2018	White Sucker	385	15.16	Female	Green	63588
Menomonee River	3/28/2018	White Sucker	423	16.65	Male	Spent	63589
Menomonee River	3/28/2018	White Sucker	445	17.52	Male	Spent	63590
Menomonee River	3/28/2018	White Sucker	415	16.34	Female	Green	63591
Menomonee River	3/28/2018	White Sucker	456	17.95	Female	Green	63592

Menomonee River	3/28/2018	White Sucker	476	18.74	Female	Green	63593
Menomonee River	3/28/2018	White Sucker	438	17.24	Male	Ripe	63594
Menomonee River	3/28/2018	White Sucker	472	18.58	Female	Green	63595
Menomonee River	3/28/2018	White Sucker	473	18.62	Female	Green	63596
Menomonee River	3/28/2018	White Sucker	495	19.49	Male	Ripe	63597
Menomonee River	3/28/2018	White Sucker	400	15.75	Male	Ripe	63598
Menomonee River	3/28/2018	White Sucker	384	15.12	Male	Ripe	63599
Menomonee River	3/28/2018	White Sucker	475	18.70	Female	Green	63600
Menomonee River	3/28/2018	White Sucker	411	16.18	Female	Green	63601
Menomonee River	3/28/2018	White Sucker	441	17.36	Male	Ripe	63602
Menomonee River	3/28/2018	White Sucker	415	16.34	Female	Green	63603
Menomonee River	3/28/2018	White Sucker	434	17.09	Male	Ripe	63604
Menomonee River	3/28/2018	White Sucker	521	20.51	Female	Green	63606
Menomonee River	3/28/2018	White Sucker	468	18.43	Male	Ripe	63607
Menomonee River	3/28/2018	White Sucker	366	14.41	Male	Ripe	63609
Menomonee River	3/28/2018	White Sucker	399	15.71	Female	Green	63610
Menomonee River	3/28/2018	White Sucker	340	13.39	Male	Ripe	63611
Menomonee River	3/28/2018	White Sucker	426	16.77	Male	Ripe	63612
Menomonee River	3/28/2018	White Sucker	405	15.94	Male	Ripe	63613
Menomonee River	3/28/2018	White Sucker	451	17.76	Female	Green	63614
Menomonee River	3/28/2018	White Sucker	391	15.39	Unknown	Unknown	63615
Menomonee River	3/28/2018	White Sucker	400	15.75	Male	Ripe	63616
Menomonee River	3/28/2018	White Sucker	421	16.57	Male	Ripe	63617
Menomonee River	3/28/2018	White Sucker	420	16.54	Male	Ripe	63618
Menomonee River	3/28/2018	White Sucker	391	15.39	Unknown	Unknown	63619
Menomonee River	3/28/2018	White Sucker	391	15.39	Male	Ripe	63620
Menomonee River	3/28/2018	White Sucker	484	19.06	Unknown	Unknown	63621
Menomonee River	3/28/2018	White Sucker	456	17.95	Male	Green	63622
Menomonee River	3/28/2018	White Sucker	400	15.75	Female	Green	63623
Menomonee River	3/28/2018	White Sucker	366	14.41	Male	Ripe	63624
Menomonee River	3/28/2018	White Sucker	456	17.95	Male	Ripe	63625
Menomonee River	3/28/2018	White Sucker	471	18.54	Female	Green	63626
Menomonee River	3/28/2018	White Sucker	433	17.05	Male	Green	63627
Menomonee River	3/28/2018	White Sucker	429	16.89	Male	Ripe	63628
Menomonee River	3/28/2018	White Sucker	502	19.76	Female	Green	63629
Menomonee River	3/28/2018	White Sucker	514	20.24	Unknown	Unknown	63630
Menomonee River	3/28/2018	White Sucker	404	15.91	Male	Ripe	63631
Menomonee River	3/28/2018	White Sucker	373	14.69	Male	Ripe	63632
Menomonee River	3/28/2018	White Sucker	455	17.91	Female	Green	63633
Menomonee River	3/28/2018	White Sucker	369	14.53	Male	Ripe	63634
Menomonee River	3/28/2018	White Sucker	409	16.10	Female	Green	63635
Menomonee River	3/28/2018	White Sucker	382	15.04	Male	Ripe	63636
Menomonee River	3/28/2018	White Sucker	378	14.88	Male	Ripe	63637
Menomonee River	3/28/2018	White Sucker	358	14.09	Male	Ripe	63638
Menomonee River	3/28/2018	White Sucker	492	19.37	Female	Green	63639
Menomonee River	3/28/2018	White Sucker	440	17.32	Male	Ripe	63640
Menomonee River	3/28/2018	White Sucker	486	19.13	Female	Green	63641

Menomonee River	3/28/2018	White Sucker	441	17.36	Female	Ripe	63642
Menomonee River	3/28/2018	White Sucker	434	17.09	Male	Ripe	63643
Menomonee River	3/28/2018	White Sucker	390	15.35	Male	Ripe	63644
Menomonee River	3/28/2018	Golden Redhorse	417	16.42	Not Examined	Not Examined	63523
Menomonee River	4/5/2018	White Sucker	448	17.64	Male	Ripe	63125
Menomonee River	4/5/2018	White Sucker	450	17.72	Female	Green	63127
Menomonee River	4/5/2018	White Sucker	429	16.89	Male	Ripe	63130
Menomonee River	4/5/2018	White Sucker	456	17.95	Male	Ripe	63134
Menomonee River	4/5/2018	White Sucker	521	20.51	Female	Green	63135
Menomonee River	4/5/2018	White Sucker	463	18.23	Male	Ripe	63136
Menomonee River	4/5/2018	White Sucker	547	21.54	Female	Green	63140
Menomonee River	4/5/2018	White Sucker	443	17.44	Male	Ripe	63164
Menomonee River	4/5/2018	White Sucker	457	17.99	Male	Ripe	63167
Menomonee River	4/5/2018	White Sucker	454	17.87	Female	Green	63168
Menomonee River	4/5/2018	White Sucker	523	20.59	Female	Green	63171
Menomonee River	4/5/2018	White Sucker	449	17.68	Male	Ripe	63172
Menomonee River	4/5/2018	White Sucker	430	16.93	Male	Ripe	63173
Menomonee River	4/5/2018	White Sucker	499	19.65	Female	Green	63175
Menomonee River	4/5/2018	White Sucker	521	20.51	Female	Green	63179
Menomonee River	4/5/2018	White Sucker	470	18.50	Male	Ripe	63181
Menomonee River	4/5/2018	White Sucker	485	19.09	Female	Green	63183
Menomonee River	4/5/2018	White Sucker	491	19.33	Female	Green	63188
Menomonee River	4/5/2018	White Sucker	492	19.37	Male	Ripe	63189
Menomonee River	4/5/2018	White Sucker	466	18.35	Male	Ripe	63190
Menomonee River	4/5/2018	White Sucker	430	16.93	Male	Ripe	63191
Menomonee River	4/5/2018	White Sucker	409	16.10	Female	Green	63192
Menomonee River	4/5/2018	White Sucker	474	18.66	Female	Green	63193
Menomonee River	4/5/2018	White Sucker	477	18.78	Female	Green	63194
Menomonee River	4/5/2018	White Sucker	494	19.45	Male	Ripe	63195
Menomonee River	4/5/2018	White Sucker	460	18.11	Male	Ripe	63196
Menomonee River	4/5/2018	White Sucker	446	17.56	Male	Ripe	63199
Menomonee River	4/5/2018	White Sucker	423	16.65	Male	Ripe	63201
Menomonee River	4/5/2018	White Sucker	471	18.54	Female	Green	63202
Menomonee River	4/5/2018	White Sucker	433	17.05	Male	Ripe	63203
Menomonee River	4/5/2018	White Sucker	490	19.29	Male	Ripe	63204
Menomonee River	4/5/2018	White Sucker	374	14.72	Female	Green	63288
Menomonee River	4/5/2018	White Sucker	361	14.21	Male	Ripe	63292
Menomonee River	4/5/2018	White Sucker	482	18.98	Male	Ripe	63294
Menomonee River	4/5/2018	White Sucker	457	17.99	Female	Green	63297
Menomonee River	4/5/2018	White Sucker	444	17.48	Male	Ripe	63298
Menomonee River	4/5/2018	White Sucker	494	19.45	Female	Green	63302
Menomonee River	4/5/2018	White Sucker	467	18.39	Male	Ripe	63303
Menomonee River	4/5/2018	White Sucker	476	18.74	Female	Green	63306
Menomonee River	4/5/2018	White Sucker	497	19.57	Female	Green	63307
Menomonee River	4/5/2018	White Sucker	481	18.94	Female	Green	63309
Menomonee River	4/5/2018	White Sucker	477	18.78	Female	Green	63310
Menomonee River	4/5/2018	White Sucker	415	16.34	Female	Spent	63312

Menomonee River	4/5/2018	White Sucker	400	15.75	Male	Ripe	63313
Menomonee River	4/5/2018	White Sucker	525	20.67	Female	Green	63314
Menomonee River	4/5/2018	White Sucker	399	15.71	Male	Ripe	63316
Menomonee River	4/5/2018	White Sucker	504	19.84	Female	Green	63318
Menomonee River	4/5/2018	White Sucker	490	19.29	Female	Spent	63319
Menomonee River	4/5/2018	White Sucker	518	20.39	Female	Green	63320
Menomonee River	4/5/2018	White Sucker	372	14.65	Male	Green	63322
Menomonee River	4/5/2018	White Sucker	367	14.45	Male	Ripe	63324
Menomonee River	4/5/2018	White Sucker	461	18.15	Female	Green	63327
Menomonee River	4/5/2018	White Sucker	475	18.70	Female	Green	63330
Menomonee River	4/5/2018	White Sucker	469	18.46	Male	Ripe	63331
Menomonee River	4/5/2018	White Sucker	429	16.89	Male	Ripe	63332
Menomonee River	4/5/2018	White Sucker	424	16.69	Male	Ripe	63334
Menomonee River	4/5/2018	White Sucker	446	17.56	Male	Green	63335
Menomonee River	4/5/2018	White Sucker	474	18.66	Female	Green	63336
Menomonee River	4/5/2018	White Sucker	481	18.94	Female	Green	63337
Menomonee River	4/5/2018	White Sucker	345	13.58	Male	Ripe	63341
Menomonee River	4/5/2018	White Sucker	423	16.65	Male	Ripe	63347
Menomonee River	4/5/2018	White Sucker	456	17.95	Male	Ripe	63353
Menomonee River	4/5/2018	White Sucker	513	20.20	Female	Green	63354
Menomonee River	4/5/2018	White Sucker	379	14.92	Male	Ripe	63355
Menomonee River	4/5/2018	White Sucker	505	19.88	Female	Green	63356
Menomonee River	4/5/2018	White Sucker	431	16.97	Male	Ripe	63357
Menomonee River	4/5/2018	White Sucker	400	15.75	Female	Green	63358
Menomonee River	4/5/2018	White Sucker	422	16.61	Male	Ripe	63360
Menomonee River	4/5/2018	White Sucker	471	18.54	Male	Ripe	63361
Menomonee River	4/5/2018	White Sucker	408	16.06	Male	Ripe	63362
Menomonee River	4/5/2018	White Sucker	374	14.72	Male	Ripe	63363
Menomonee River	4/5/2018	White Sucker	432	17.01	Female	Green	63364
Menomonee River	4/5/2018	White Sucker	464	18.27	Female	Green	63365
Menomonee River	4/5/2018	White Sucker	524	20.63	Female	Green	63366
Menomonee River	4/5/2018	White Sucker	430	16.93	Female	Green	63367
Menomonee River	4/5/2018	White Sucker	363	14.29	Male	Ripe	63368
Menomonee River	4/5/2018	White Sucker	512	20.16	Female	Ripe	63369
Menomonee River	4/5/2018	White Sucker	469	18.46	Male	Ripe	63370
Menomonee River	4/5/2018	White Sucker	484	19.06	Male	Ripe	63376
Menomonee River	4/5/2018	White Sucker	364	14.33	Male	Ripe	63559
Menomonee River	4/5/2018	White Sucker	482	18.98	Female	Green	72025
Menomonee River	4/5/2018	White Sucker	502	19.76	Female	Green	72080

Table A.2. Biological data from all fish marked on the Milwaukee River from March 27th through April 12th, 2018. PIT tag prefix: 9002300000 (except where listed otherwise).

Catch Location	Date	Species	Length (mm)	Length (in)	Sex	Sex Condition	PIT Tag Number
Milwaukee River	3/27/2018	Rainbow Trout	619	24.37	Female	Green	63267
Milwaukee River	3/27/2018	Rainbow Trout	615	24.21	Female	Ripe	63349
Milwaukee River	3/27/2018	Rainbow Trout	590	23.23	Female	Ripe	63375
Milwaukee River	3/27/2018	Northern Pike	763	30.04	Female	Green	63241
Milwaukee River	3/27/2018	Northern Pike	812	31.97	Female	Green	63342
Milwaukee River	3/27/2018	Northern Pike	842	33.15	Female	Green	63343
Milwaukee River	3/27/2018	Northern Pike	735	28.94	Female	Green	63346
Milwaukee River	3/27/2018	Northern Pike	756	29.76	Unknown	Unknown	63350
Milwaukee River	3/27/2018	Northern Pike	729	28.70	Male	Ripe	63380
Milwaukee River	3/27/2018	Quillback	475	18.70	Unknown	Unknown	63385
Milwaukee River	3/27/2018	Silver Redhorse	512	20.16	Unknown	Unknown	63231
Milwaukee River	3/27/2018	Silver Redhorse	481	18.94	Male	Unknown	63232
Milwaukee River	3/27/2018	Silver Redhorse	510	20.08	Male	Unknown	63352
Milwaukee River	3/27/2018	Silver Redhorse	533	20.98	Male	Unknown	63371
Milwaukee River	3/27/2018	Silver Redhorse	530	20.87	Unknown	Unknown	63377
Milwaukee River	3/27/2018	Golden Redhorse	437	17.20	Unknown	Unknown	63263
Milwaukee River	3/27/2018	Golden Redhorse	410	16.14	Unknown	Unknown	63272
Milwaukee River	3/27/2018	Golden Redhorse	411	16.18	Unknown	Unknown	63273
Milwaukee River	3/27/2018	Golden Redhorse	432	17.01	Unknown	Unknown	63339
Milwaukee River	3/27/2018	Golden Redhorse	424	16.69	Unknown	Unknown	63344
Milwaukee River	3/27/2018	Smallmouth Bass	395	15.55	Unknown	Unknown	63381
Milwaukee River	3/27/2018	Walleye	563	22.17	Male	Ripe	63245
Milwaukee River	3/27/2018	Walleye	563	22.17	Male	Ripe	63348
Milwaukee River	3/27/2018	Walleye	516	20.31	Male	Ripe	63372
Milwaukee River	3/27/2018	Walleye	609	23.98	Female	Green	63374
Milwaukee River	3/27/2018	Walleye	500	19.69	Male	Ripe	63386
Milwaukee River	3/27/2018	Walleye	580	22.83	Female	Green	63388
Milwaukee River	3/27/2018	Walleye	588	23.15	Male	Ripe	63389
Milwaukee River	3/27/2018	Walleye	484	19.06	Male	Ripe	956000002975339
Milwaukee River	3/29/2018	Northern Pike	588	23.15	Male	Ripe	72072
Milwaukee River	3/29/2018	Northern Pike	794	31.26	Female	Green	72085
Milwaukee River	3/29/2018	Northern Pike	652	25.67	Male	Ripe	72089
Milwaukee River	3/29/2018	Northern Pike	667	26.26	Female	Green	72094
Milwaukee River	3/29/2018	Silver Redhorse	471	18.54	Male	Green	72062
Milwaukee River	3/29/2018	Silver Redhorse	584	22.99	Female	Green	72068
Milwaukee River	3/29/2018	Silver Redhorse	531	20.91	Male	Green	72082

Milwaukee River	3/29/2018	Golden Redhorse	393	15.47	Unknown	Unknown	72066
Milwaukee River	3/29/2018	Golden Redhorse	422	16.61	Unknown	Unknown	72076
Milwaukee River	3/29/2018	Golden Redhorse	361	14.21	Unknown	Unknown	72093
Milwaukee River	3/29/2018	Golden Redhorse	401	15.79	Unknown	Unknown	72096
Milwaukee River	3/29/2018	Shorthead Redhorse	519	20.43	Male	Green	72063
Milwaukee River	3/29/2018	Shorthead Redhorse	361	14.21	Male	Green	72069
Milwaukee River	3/29/2018	Smallmouth Bass	401	15.79	Not Examined	Not Examined	72077
Milwaukee River	3/29/2018	Walleye	534	21.02	Male	Ripe	72064
Milwaukee River	3/29/2018	Walleye	650	25.59	Female	Green	72067
Milwaukee River	3/29/2018	Walleye	666	26.22	Female	Green	72073
Milwaukee River	3/29/2018	Walleye	554	21.81	Male	Ripe	72081
Milwaukee River	3/29/2018	Walleye	479	18.86	Male	Ripe	72083
Milwaukee River	3/29/2018	Walleye	512	20.16	Male	Ripe	72088
Milwaukee River	3/29/2018	Walleye	505	19.88	Male	Ripe	72090
Milwaukee River	3/29/2018	Walleye	555	21.85	Male	Ripe	72092
Milwaukee River	4/5/2018	Rainbow Trout	699	27.52	Female	Ripe	63305
Milwaukee River	4/5/2018	Rainbow Trout	650	25.59	Female	Green	63308
Milwaukee River	4/5/2018	Rainbow Trout	693	27.28	Female	Ripe	63315
Milwaukee River	4/5/2018	Rainbow Trout	666	26.22	Male	Ripe	63329
Milwaukee River	4/5/2018	Rainbow Trout	639	25.16	Female	Green	72006
Milwaukee River	4/5/2018	Brown Trout	713	28.07	Male	Spent	72009
Milwaukee River	4/5/2018	Brown Trout	481	18.94	Unknown	Unknown	72012
Milwaukee River	4/5/2018	Walleye	571	22.48	Male	Ripe	63289
Milwaukee River	4/5/2018	Walleye	486	19.13	Male	Ripe	63290
Milwaukee River	4/5/2018	Walleye	461	18.15	Male	Ripe	63293
Milwaukee River	4/5/2018	Walleye	519	20.43	Male	Ripe	63295
Milwaukee River	4/5/2018	Walleye	501	19.72	Male	Ripe	63296
Milwaukee River	4/5/2018	Walleye	557	21.93	Male	Ripe	63304
Milwaukee River	4/5/2018	Walleye	595	23.43	Male	Ripe	63311
Milwaukee River	4/5/2018	Walleye	485	19.09	Male	Ripe	63321
Milwaukee River	4/5/2018	Walleye	612	24.09	Female	Ripe	63323
Milwaukee River	4/5/2018	Walleye	615	24.21	Female	Ripe	63325
Milwaukee River	4/5/2018	Walleye	641	25.24	Female	Green	63326
Milwaukee River	4/5/2018	Walleye	660	25.98	Female	Ripe	72073
Milwaukee River	4/12/2018	Brown Trout	690	27.17	Female	Ripe	63553
Milwaukee River	4/12/2018	Brown Trout	316	12.44	Unknown	Unknown	63558
Milwaukee River	4/12/2018	Brown Trout	455	17.91	Unknown	Unknown	63560
Milwaukee River	4/12/2018	Brown Trout	502	19.76	Unknown	Unknown	63564
Milwaukee River	4/12/2018	Brown Trout	520	20.47	Male	Spent	63579
Milwaukee River	4/12/2018	Northern Pike	460	18.11	Unknown	Unknown	63554
Milwaukee River	4/12/2018	Northern Pike	397	15.63	Unknown	Unknown	63559
Milwaukee River	4/12/2018	Northern Pike	660	25.98	Unknown	Unknown	63569
Milwaukee River	4/12/2018	Northern Pike	534	21.02	Unknown	Unknown	63574

Milwaukee River	4/12/2018	Common Carp	675	26.57	Unknown	Unknown	63565
Milwaukee River	4/12/2018	Common Carp	698	27.48	Unknown	Unknown	63578
Milwaukee River	4/12/2018	Quillback	445	17.52	Unknown	Unknown	63557
Milwaukee River	4/12/2018	Quillback	476	18.74	Unknown	Unknown	63570
Milwaukee River	4/12/2018	Golden Redhorse	375	14.76	Female	Green	63200
Milwaukee River	4/12/2018	Golden Redhorse	362	14.25	Female	Green	63218
Milwaukee River	4/12/2018	Golden Redhorse	390	15.35	Female	Green	63221
Milwaukee River	4/12/2018	Golden Redhorse	343	13.50	Female	Green	63223
Milwaukee River	4/12/2018	Golden Redhorse	375	14.76	Female	Green	63224
Milwaukee River	4/12/2018	Golden Redhorse	394	15.51	Female	Green	63549
Milwaukee River	4/12/2018	Golden Redhorse	422	16.61	Unknown	Unknown	63555
Milwaukee River	4/12/2018	Golden Redhorse	387	15.24	Female	Green	63563
Milwaukee River	4/12/2018	Golden Redhorse	407	16.02	Male	Green	63568
Milwaukee River	4/12/2018	Golden Redhorse	365	14.37	Unknown	Unknown	63572
Milwaukee River	4/12/2018	Golden Redhorse	573	22.56	Female	Green	63573
Milwaukee River	4/12/2018	Shorthead Redhorse	320	12.60	Female	Green	63210
Milwaukee River	4/12/2018	Shorthead Redhorse	501	19.72	Male	Green	63556
Milwaukee River	4/12/2018	Shorthead Redhorse	313	12.32	Female	Green	63566
Milwaukee River	4/12/2018	Shorthead Redhorse	497	19.57	Female	Green	63571
Milwaukee River	4/12/2018	Shorthead Redhorse	382	15.04	Female	Green	63575
Milwaukee River	4/12/2018	Shorthead Redhorse	518	20.39	Female	Green	63577
Milwaukee River	4/12/2018	Smallmouth Bass	442	17.40	Unknown	Unknown	63185
Milwaukee River	4/12/2018	Smallmouth Bass	440	17.32	Unknown	Unknown	63187
Milwaukee River	4/12/2018	Smallmouth Bass	316	12.44	Unknown	Unknown	63209
Milwaukee River	4/12/2018	Smallmouth Bass	417	16.42	Unknown	Unknown	63212
Milwaukee River	4/12/2018	Smallmouth Bass	335	13.19	Unknown	Unknown	63216
Milwaukee River	4/12/2018	Smallmouth Bass	431	16.97	Unknown	Unknown	63217
Milwaukee River	4/12/2018	Smallmouth Bass	368	14.49	Unknown	Unknown	63222
Milwaukee River	4/12/2018	Smallmouth Bass	390	15.35	Unknown	Unknown	63227

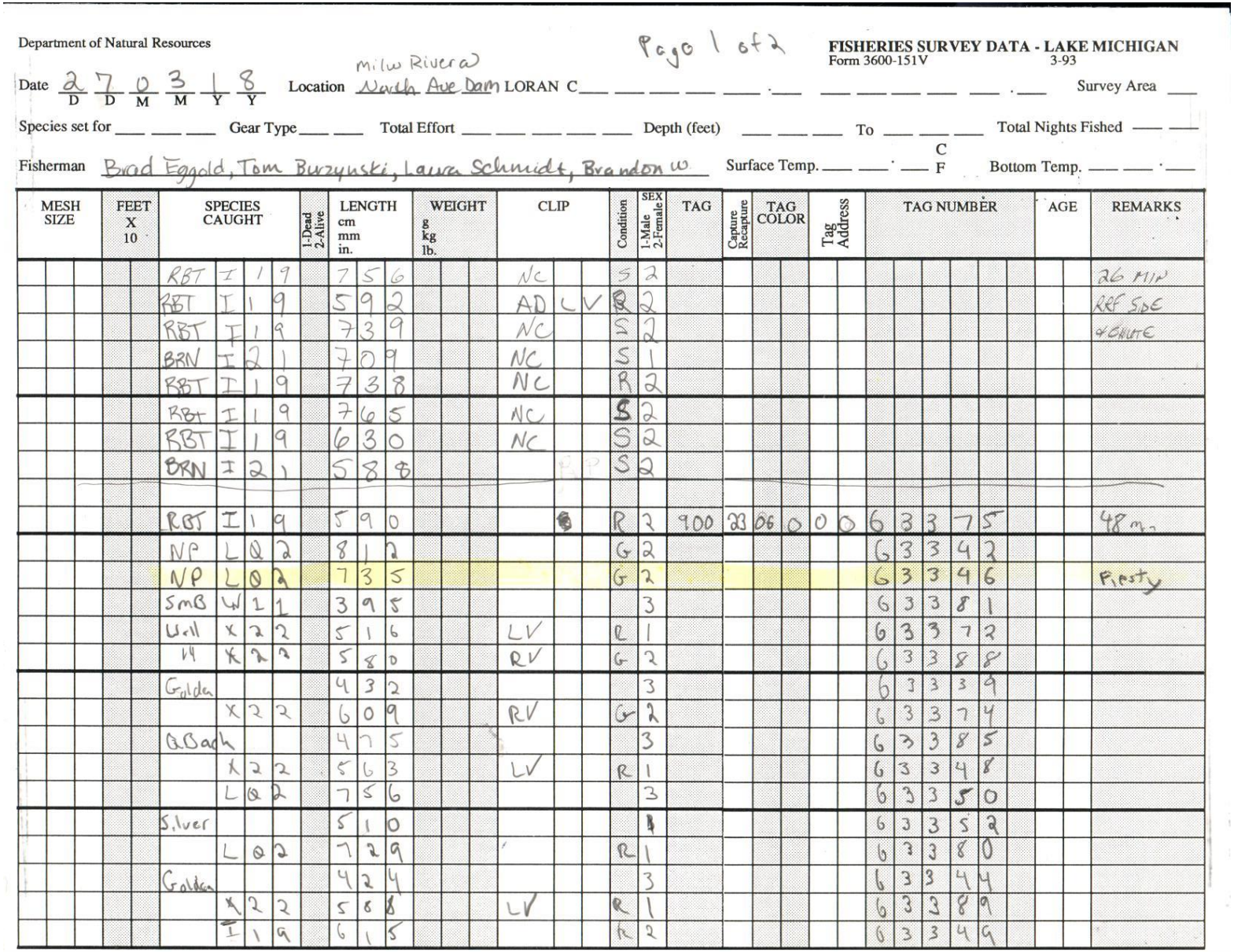
Milwaukee River	4/12/2018	Smallmouth Bass	383	15.08	Unknown	Unknown	63229
Milwaukee River	4/12/2018	Smallmouth Bass	444	17.48	Unknown	Unknown	63238
Milwaukee River	4/12/2018	Walleye	500	19.69	Male	Ripe	63548
Milwaukee River	4/12/2018	Walleye	501	19.72	Male	Ripe	63550
Milwaukee River	4/12/2018	Walleye	506	19.92	Female	Ripe	63551
Milwaukee River	4/12/2018	Walleye	723	28.46	Female	Spent	63552
Milwaukee River	4/12/2018	Walleye	625	24.61	Female	Green	63561
Milwaukee River	4/12/2018	Walleye	605	23.82	Male	Ripe	63562
Milwaukee River	4/12/2018	Walleye	457	17.99	Male	Ripe	63567
Milwaukee River	4/12/2018	Walleye	499	19.65	Male	Ripe	63576

Table A.3. Biological data from all fish recaptured through the PIT tag array on the Menomonee River from March 8th through June 6th, 2018. PIT tag prefix: 9002300000.

Detection Date	Detection Time	Tag Number	Species	Mark Location
3/27/2018	8:43:44 AM	72035	White Sucker	Menomonee River
3/27/2018	8:48:01 AM	63282	White Sucker	Menomonee River
3/27/2018	9:30:42 AM	72050	White Sucker	Menomonee River
3/27/2018	9:39:13 AM	72055	White Sucker	Menomonee River
3/27/2018	10:07:29 AM	63156	White Sucker	Menomonee River
3/27/2018	10:31:21 AM	72045	White Sucker	Menomonee River
3/27/2018	10:43:43 AM	63373	White Sucker	Menomonee River
3/27/2018	10:49:45 AM	72041	White Sucker	Menomonee River
3/27/2018	10:57:30 AM	63145	White Sucker	Menomonee River
3/27/2018	11:01:06 AM	63170	White Sucker	Menomonee River
3/27/2018	11:15:58 AM	72038	White Sucker	Menomonee River
3/27/2018	11:27:26 AM	63379	White Sucker	Menomonee River
3/27/2018	12:49:46 PM	63250	White Sucker	Menomonee River
3/27/2018	12:58:45 PM	63154	White Sucker	Menomonee River
3/27/2018	12:59:46 PM	63166	White Sucker	Menomonee River
3/27/2018	1:00:12 PM	72071	White Sucker	Menomonee River
3/27/2018	1:19:03 PM	72056	White Sucker	Menomonee River
3/27/2018	1:34:46 PM	72053	White Sucker	Menomonee River
3/27/2018	1:49:37 PM	72079	White Sucker	Menomonee River
3/27/2018	1:56:33 PM	63146	Rainbow Trout	Menomonee River
3/27/2018	2:57:30 PM	63301	White Sucker	Menomonee River
3/27/2018	3:11:10 PM	63251	White Sucker	Menomonee River
3/27/2018	3:27:22 PM	63178	White Sucker	Menomonee River
3/27/2018	3:40:02 PM	72049	White Sucker	Menomonee River
3/27/2018	3:45:42 PM	63165	White Sucker	Menomonee River
3/27/2018	3:46:56 PM	63144	White Sucker	Menomonee River
3/27/2018	4:04:34 PM	72022	White Sucker	Menomonee River
3/27/2018	7:24:15 PM	63283	White Sucker	Menomonee River
3/27/2018	8:26:23 PM	72034	White Sucker	Menomonee River
3/27/2018	10:43:46 PM	63143	White Sucker	Menomonee River
3/28/2018	12:20:29 AM	63382	Northern Pike	Menomonee River
3/28/2018	1:31:14 AM	63105	White Sucker	Menomonee River
3/28/2018	2:00:15 AM	72086	White Sucker	Menomonee River
3/28/2018	2:04:55 AM	72091	White Sucker	Menomonee River
3/28/2018	2:42:00 AM	72052	White Sucker	Menomonee River
3/28/2018	3:51:14 AM	63106	White Sucker	Menomonee River
3/28/2018	4:12:33 AM	72058	White Sucker	Menomonee River
3/28/2018	10:43:10 AM	63346	Northern Pike	Milwaukee River
3/28/2018	7:14:36 PM	72039	White Sucker	Menomonee River
3/28/2018	9:12:46 PM	63390	White Sucker	Menomonee River
3/29/2018	12:04:11 AM	63112	Rainbow Trout	Menomonee River
3/29/2018	12:43:13 AM	63343	Northern Pike	Milwaukee River
3/29/2018	4:37:34 AM	63248	White Sucker	Menomonee River
3/29/2018	5:05:37 AM	63599	White Sucker	Menomonee River

3/29/2018	11:13:21 PM	63226	White Sucker	Menomonee River
3/30/2018	1:09:34 AM	72047	Rainbow Trout	Menomonee River
3/30/2018	1:25:12 AM	63522	White Sucker	Menomonee River
3/30/2018	3:12:56 AM	63547	White Sucker	Menomonee River
3/30/2018	5:18:35 AM	72043	White Sucker	Menomonee River
3/31/2018	7:46:32 PM	63643	White Sucker	Menomonee River
3/31/2018	8:06:24 PM	63644	White Sucker	Menomonee River
4/1/2018	1:51:45 AM	72054	White Sucker	Menomonee River
4/4/2018	4:40:17 PM	63606	White Sucker	Menomonee River
4/4/2018	11:36:26 PM	63121	White Sucker	Menomonee River
4/5/2018	12:36:02 AM	63534	White Sucker	Menomonee River
4/5/2018	4:37:16 AM	63198	White Sucker	Menomonee River
4/5/2018	10:38:32 PM	63137	White Sucker	Menomonee River
4/5/2018	10:49:28 PM	63604	White Sucker	Menomonee River
4/6/2018	12:03:55 AM	63626	White Sucker	Menomonee River
4/6/2018	1:52:46 AM	63260	White Sucker	Menomonee River
4/6/2018	1:57:39 AM	63627	White Sucker	Menomonee River
4/6/2018	5:47:09 AM	63176	White Sucker	Menomonee River
4/6/2018	6:13:55 AM	63602	White Sucker	Menomonee River
4/6/2018	5:00:56 PM	63403	White Sucker	Menomonee River
4/8/2018	1:06:16 AM	63517	White Sucker	Menomonee River
4/8/2018	5:38:03 AM	63529	White Sucker	Menomonee River
4/8/2018	11:59:13 PM	63439	White Sucker	Menomonee River
4/10/2018	12:07:38 AM	63592	White Sucker	Menomonee River
4/11/2018	4:13:59 AM	63518	White Sucker	Menomonee River
4/11/2018	10:41:16 AM	63139	White Sucker	Menomonee River
4/12/2018	1:28:50 AM	63115	White Sucker	Menomonee River
4/12/2018	2:33:37 AM	63124	White Sucker	Menomonee River
4/12/2018	7:15:37 AM	63387	White Sucker	Menomonee River
4/26/2018	11:24:59 PM	63610	White Sucker	Menomonee River
4/26/2018	11:33:21 PM	63583	White Sucker	Menomonee River
4/27/2018	2:05:05 AM	63363	White Sucker	Menomonee River
4/28/2018	3:42:21 AM	63393	White Sucker	Menomonee River
4/28/2018	8:08:04 PM	63353	White Sucker	Menomonee River
4/28/2018	11:10:22 PM	63598	White Sucker	Menomonee River
4/29/2018	12:33:51 AM	63136	White Sucker	Menomonee River
4/29/2018	4:19:41 AM	63614	White Sucker	Menomonee River
4/29/2018	8:13:40 PM	63345	White Sucker	Menomonee River
4/30/2018	2:51:23 PM	63240	White Sucker	Menomonee River
4/30/2018	10:53:43 AM	63448	White Sucker	Menomonee River
5/1/2018	5:48:23 AM	63203	White Sucker	Menomonee River
5/2/2018	2:44:58 AM	63196	White Sucker	Menomonee River
5/2/2018	10:43:36 PM	63159	White Sucker	Menomonee River
5/4/2018	6:24:35 PM	63223	Golden Redhorse	Milwaukee River
5/5/2018	3:45:30 PM	63216	Smallmouth Bass	Milwaukee River
5/9/2018	1:33:14 AM	63172	White Sucker	Menomonee River
5/17/2018	2:46:39 AM	72076	Golden Redhorse	Milwaukee River
5/18/2018	12:54:25 AM	63224	Golden Redhorse	Milwaukee River

Table A.4. Field forms for spring 2018 sampling on both the Menomonee River and the Milwaukee River.



Department of Natural Resources — Page 1 of 2 — FISHERIES SURVEY DATA - LAKE MICHIGAN, Form 3600-151V, 3-93

Date 27 03 18 (D D M M Y Y) Location Milw Rivera North Ave Dam LORAN C ____ Survey Area ____

Species set for ____ Gear Type ____ Total Effort ____ Depth (feet) ____ To ____ Total Nights Fished ____

Fisherman Brad Eggold, Tom Burzynski, Laura Schmidt, Brandon W Surface Temp. ____ C / ____ F Bottom Temp. ____

MESH SIZE	FEET X 10	SPECIES CAUGHT	1-Dead 2-Alive	LENGTH cm mm in.	WEIGHT g kg lb.	CLIP	Condition	SEX 1-Male 2-Female	TAG	Capture Recapture	TAG COLOR	Tag Address	TAG NUMBER	AGE	REMARKS
		RBT I 19		756		NC	S	2							26 MM
		RBT I 19		592		AD LV	R	2							REF SIDE
		RBT I 19		739		NC	S	2							ADIPOSE
		BRN I 21		709		NC	S	1							
		RBT I 19		738		NC	R	2							
		RBT I 19		765		NC	S	2							
		RBT I 19		630		NC	S	2							
		BRN I 21		588			S	2							
		RBT I 19		590			R	2	900	23	06	0 0 0	633675		48 mm
		NP L 02		812			G	2					633421		
		NP L 02		735			G	2					633466		Fresty
		SMB W 21		398				3					633381		
		Wall X 22		516		LV	R	1					633721		
		" X 22		580		RV	G	2					633882		
		Golden		432				3					633391		
		X 22		609		RV	G	2					633741		
		GSucker		475				3					633855		
		X 22		563		LV	R	1					633748		
		L 02		756				3					633750		
		Silver		510				3					633521		
		L 02		729			R	1					633801		
		Golden		424				3					633446		
		X 22		568		LV	R	1					633899		
		I 19		615			R	2					633496		

Department of Natural Resources

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FISHERIES SURVEY DATA - LAKE MICHIGAN
Form 3600-151V 3-93

Date 27 03 18 (D D M M Y Y) Location Milw River @ North Ave Dam LORAN C ____ Survey Area ____

Species set for ____ Gear Type ____ Total Effort ____ Depth (feet) ____ To ____ Total Nights Fished ____

Fisherman ____ Surface Temp. ____ °C ____ °F Bottom Temp. ____

MESH SIZE	FEET X 10	SPECIES CAUGHT	1-Dead 2-Alive	LENGTH cm mm in.	WEIGHT g kg lb.	CLIP	Condition	SEX 1-Male 2-Female	TAG	Capture Recapture	TAG COLOR	Tag Address	TAG NUMBER	AGE	REMARKS
		I 21		612		00	R	1							
		X 22		500		RV	R	1	900	2	300	000	63386		
		I 21		741		00	S	2							
		I 21		642		ARP	S	1							
		Silver		533				1					63371		
		Silver		530				3					63377		
		L 02		842			G	2					63343		
		I 21		450		A 01		3							
		Golden		410				3					63272		
		Silver		512				3					63231		
		L 02		763			G	2					63241		
		X 22		563		00	R	1					63245		
		Golden		437				3					63263		
		I 19		619		00	G	2					63261		
		I 21		722		00		1							
		Silver		481				1					63232		
		I 21		589		ARP		1							
		Golden		411				3					63273		
		X 22		484		RV	R	1				956	00000297539		

Department of Natural Resources

Pg 1 of 1

FISHERIES SURVEY DATA - LAKE MICHIGAN
Form 3600-151V 3-93

Date 29 (D D) 03 (M M) 18 (Y Y) Location Milw River 2 54th Ave Dam LORAN C ___ Survey Area ___

Species set for ___ Gear Type 51 Total Effort ___ Depth (feet) ___ To ___ Total Nights Fished ___

Fisherman 900 2300000 Surface Temp. ___ °C ___ °F Bottom Temp. ___

MESH SIZE	FEET X 10	SPECIES CAUGHT	1-Dead 2-Alive	LENGTH cm mm in.	WEIGHT gg kg lb.	CLIP	Condition	SEX 1-Male 2-Female	TAG	Capture Recapture	TAG COLOR	Tag Address	TAG NUMBER	AGE	REMARKS
		WAE		401									72077		
		SILVER RH		531			61						72082		
		SHORTHEAD RH		519			61						72063		
		↓		361			61						72069		
		SILVER RH		471			61						72062		
		NOP		794		RV?	62						72085		
		NOP		652			R1						72089		
		GOLDEN RH		393			U3						72066		
		GOLDEN RH		422			U3						72076		MIAMI NICE R. 05/17/2018
		NOP		667			62						72094		
		WAE		544		RV	R1						72081		171/ YELLOW
		WAE		505		LV	R1					GIVEN LP CLIP	72090		
		WAE		555		RV	R1						72092		
		WAE		534		RV	R1						72064		
		WAE		650		LV	62						72067		
		WAE		666		RV	62						72073		
		NOP		588			R1						72072		
		SILVER RH		584			62						72068		
		WAE		479		RV	R1						72083		
		GOLDEN RH		361			U3						72093		
		↓		401			U3						72096		
		WAE		512		LV	R1						72088		

Department of Natural Resources

MILWAUKEE RIVER - TRANSFERS TO MENOMONEE R. FOR FISH PASSAGE

FISHERIES SURVEY DATA - LAKE MICHIGAN
Form 3600-151V 3-93

Date 05 04 18 (D D M M Y Y) Location milw River @ North Ave Dam LORAN C ____ Survey Area ____

Species set for ____ Gear Type 51 Total Effort ____ Depth (feet) ____ To ____ Total Nights Fished ____

Fisherman 900 2300000 Surface Temp. ____ °C ____ °F Bottom Temp. ____

MESH SIZE	FEET X 10	SPECIES CAUGHT	1-Dead 2-Alive	LENGTH cm (mm) in.	WEIGHT g kg lb.	CLIP	Condition	SEX 1-Male 2-Female	TAG	Capture Recapture	TAG COLOR	Tag Address	TAG NUMBER	AGE	REMARKS
		RBT 119		691		NC	R	2							
		↓		693		NC	R	2					63315		
				699		NC	R	2					63305		
				650		NC	R	2					63368		
		↓		666		NC	R	1					63329		
		WAE X22		594		LV	R	1					NO TAG		BAD SHAPE
				660		RV	R	2					72073		RECAP MILW R
				595		NC	R	1					63311		GILL LICE
				501		RV	R	1					63296		
				615		RV	R	2					63325		
				641		NC	R	2					63326		
				519		RV	R	1					63295		
				612		RV	R	2					63323		
				571		LV	R	1					63289		
				486		RV	R	1					63290		
				461		RV	R	1					63293		
				485		RV	R	1	956000029753397				63321		RECAP
				557		NC	R	1					63304		
		↓		496		RV	R	1					63386		RECAP MILW R
		BRT 121		713		NC	S	1					72009		
		↓		481		A	U	3					72012		
		RBT 119		639		NC	G	2					72006		

Department of Natural Resources

Fisheries Survey Data – Lake Michigan

Form 3600-151V 3-93

Date 12 04 18 (D D M M Y Y) Location Milw River @ North Ave Dam LORAN C ___ Survey Area ___

Species set for ___ Gear Type 51 Total Effort ___ Depth (feet) ___ To ___ Total Nights Fished ___

Fisherman ___ LV CLIP – 2ND MARK Surface Temp. ___ °C / °F Bottom Temp. ___

MESH SIZE	FEET X 10	SPECIES CAUGHT	1-Dead 2-Alive	LENGTH cm mm in	WEIGHT g kg lb.	CLIP	Condition	SEX 1-Male 2-Female	TAG	Capture Recapture	TAG COLOR	Tag Address	TAG NUMBER	AGE	REMARKS
		WAE X 22	2	723		LV	5	2					63552		
		↓ ↓		501		RV	R	1					63550		
		↓ ↓		605		RV	R	1					63562		
		NOP L 02		534		NC	U	3					63574		
		WAE X 22		499		LV	R	1					63576		
		↓ ↓		555		NC	R	1		R			63304		RECAP
		↓ ↓		457		NC	R	1					63567		
		BRT I 21		520		NC	S	1					63579		
		NOP L Ø 2		660		NC	U	3					63569		
		↓ ↓		397		NC	U	3					63559		
		WAE X 22		506		NC	R	2					63551		
		NOP L 02		460		NC	U	3					63554		
		WAE X 22		625		RV	6	2					63561		
		QBC N		445		NC	U	3					63557		
		↓		476		NC	U	3					63570		
		WAE X 22		500		LV	R	1					63548		
		SRH N		501		NC	6	1					63556		
		BRT I 21		690		NC	R	2					63553		
		GLD RH N		422		NC	U	3					63555		
		GRRH		573		NC	6	2					63573		
		BRT I 21		455		A	U	3					63560		
		GLD RH N		365		NC	U	3					63572		
		SRH		518		NC	6	2					63577		
		GLD RH		407		NC	6	1					63568		
		GLDRH		394		NC	6	2					63549		

Department of Natural Resources

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Fisheries Survey Data – Lake Michigan
Form 3600-151V 3-93

Date 1 2 0 4 1 8 (D D M M Y Y) Location Milw River @ 16th Ave Dam LORAN C ___ Survey Area ___

Species set for ___ Gear Type ___ Total Effort ___ Depth (feet) ___ To ___ Total Nights Fished ___

Fisherman ___ Surface Temp. ___ °C / °F Bottom Temp. ___

MESH SIZE	FEET X 10	SPECIES CAUGHT	1-Dead 2-Alive	LENGTH cm mm in	WEIGHT g kg lb.	CLIP	Condition	SEX 1-Male 2-Female	TAG	Capture Recapture	TAG COLOR	Tag Address	TAG NUMBER	AGE	REMARKS
		GLD RH N	2	387		NC	6	2					63563		
		SHRT RH N		497		NC	6	2					63571		
		↓ N		382		NC	6	2					63575		
		CARP M 1 2		675		NC	U	3					63565		
		BRT I 2 1		502		NC	U	3					63564		
		SHRT RH N		313		NC	6	2					63566		
		CARP M 1 2		698		NC	U	3					63578		
		BRT I 2 1		316		A 0 1	U	3					63558		
		GLD RH		375		NC	6	2					63200		
		SMB W 1 1		316		NC	U	3					63209		
		↓ ↓		417		NC	U	3					63212		
				440		NC	U	3					63187		
				368		NC	U	3					63222		
				431		NC	U	3					63217		
				444		NC	U	3					63238		
				390		NC	U	3					63227		
				383		NC	U	3					63229		
				335		NC	U	3					63216		
		↓ ↓		442		NC	U	3					63185		
		GLD RH N		390		NC	6	2					63221		
		↓		375		NC	6	2					63224		
				343		NC	6	2					63223		
		↓		362		NC	6	2					63218		
		SHRT RH		326		NC	6	2					63210		

State of Wisconsin
Department of ~~Natural~~ Resources

Great Lakes Creel Survey Catch Record

Form 3600-145 (R 7/02)

Survey Site	County	Clerk
Menomonee River		

Date (MM/DD/YYYY)	County Code (2 digits)	Survey Site Code (3 digits)	Fishery Type
03/21/18			☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address	Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address
I19		732	N/C	23 63158			NOG		412		63178		
I19		774	LM	63153			NOG		430		63145		
I19		785	ALM	63146			NOG		487		63156		
I19		757	ARV	63112			NOG		392		63109		
I19		590	N/C	63104			NOG		421		63111		
I19		690	N/C	63141			NOG		433		63165		
I19		650	N/C	63107			NOG		421		72075		
NOG		461		63149			NOG		454		72091		
NOG		441		63163			NOG		465		72079		
NOG		432		63106			I19		751	LMLV	72070		
NOG		498		63155			I19		683	LM	72084		
NOG		455		63105			I19		702	N/C	72074		
NOG		444		63177			I19		647	N/C	72087		
NOG		422		63144			I19		776	N/C	72095		
NOG		462		63143			I19		464		72078		
NOG		422		63166			NOG		443		72086		
NOG		443		63150									
NOG		350		63176									
I19		725	ARV	63148									
NOG		502		63170									
NOG		448		63152									
NOG		409		63151									
NOG		532		63108									
NOG		364		63186									
NOG		490		63154									

State of Wisconsin
Department of Natural Resources

Great Lakes Creel Survey Catch Record
Form 3600-145 (R 7/02)

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Survey Site	County	Clerk
Menomonee River		DS + BW

Date (MM/DD/YYYY)	County Code (2 digits)	Survey Site Code (3 digits)	Fishery Type
3-22-18			☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address
I19		657	N/C	63328		
I19		700	N/C	63338		
I19		733	N/C	63253		
I19		728	ALM	63299		
I19		803	ARV	63284		
I19		463	N/C	63257		
I19		756	N/C	63300		
I19		570	N/C	63278		
RT (Gobies)		426		63270		
N09		504		63247		
N09		423		63301		
N09		480		63251		
N09		438		63285		
N09		473		63249		
N09		401		63286		
N09		444		63244		
N09		427		63255		
N09		481		63250		
N09		382		63256		
N09		505		63248		
N09		419		63282	✓	
N09		417		63283		
N09		396		63279		
I19		445	ARV	63281		
N09		464		63277		
N09		424		63287		

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address
N09		512		63291		
N09		468		63280		
N09		525		72057		
I19		430	N/C	72057		
N09		497		72043		
N09		452		72044		
N09		452		72054		
N09		458		72071		
N09		406		72052		
N09		383		72039		
N09		457		72050		
I19		471	N/C	72042		
N09		434		72040		
N09		466		72035	✓	
N09		458		72045		
N09		457		72053		
N09		436		72058		
N09		528		72022		
N09		550		72059		
N09		486		72056		
N09		423		72060		
N09		450		72064		
N09		400		?		
N09		498		72037		
N09		398		72034		

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Great Lakes Creel Survey Catch Record
Form 3600-145 (R 7/02)

Survey Site	County	Clerk
Menomonee River		DS + BW

Date (MM/DD/YYYY)	County Code (2 digits)	Survey Site Code (3 digits)	Fishery Type
03/28/18			☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address	Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address
~~N09~~	__.__	____	__	_____	__	__	___	__.__	____	__	_____	__	__
N09		449		72055									
N09		382		72049									
N09		408		72046									
F19		519	W/C	72047									
N09		509		72045									
N09		498		72038									
N09		440		72041									
N09		450		72033									
N09		446		72036									
F19		607	LM	63351									
N09		491		63379									
N09		396		63384									
N09		480		63383									
N09		473		63340									
N09		403		63387									
N09		361		63345									
N09		405		63390									
N09		500		63373									
L02		681		63382	—		6th	Street					

State of Wisconsin
Department of Natural Resources

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Great Lakes Creel Survey Catch Record

Form 3600-145 (R 7/02)

Survey Site	County	Clerk
Menomonee River		

Date (MM/DD/YYYY)	County Code (2 digits)	Survey Site Code (3 digits)	Fishery Type
3-28-18	900	23000	☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description			Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description		
				Number	Color	Address					Number	Color	Address
N09	.__	490	LV	63264			N09	.__	382	LV	63636	R	1
		394		63230	R	1			514		63630	U	3
	T	518		63268	U	3			456		63622	G	1
		524		63233	U	3			404		63631	R	1
	T	537		63274	U	3			441		63642	R	2
		414		63239	G	1			471		63626	G	2
		417		63234	U	3			434		63643	R	1
		483		63220	G	2			440		63640	R	1
		453		63261	U	3			492		63639	G	2
		457		63271	G	2			486		63641	G	2
	T	435		63265	U	1			391		63615	U	3
		420		63242	R	1			358		63638	R	1
		481		63266	U	3		T	451		63614	G	2
		386		63243	U	1			502		63629	G	2
		489		63252	U	3			400		63623	G	2
	T	395		63236	R	1			433		63627	G	1
		483		63240	U	3		BITE MARK	455		63633	G	2
	T	512		63258	U	3		T	421		63617	R	1
		444		63260	U	1			400		63616	R	1
	L TAIL	492		63235	U	3			409		63635	G	2
		492		63262	U	3			373		63632	R	1
	T	533		63254	G	2		T	429		63628	R	1
		391		63620	R	1			390		63644	R	1
		405		63613	R	1			378		63637	R	1
		484		63621	U	3			369		63634	R	1
		420		63618	R	1			391		63619	U	3

of Wisconsin
Department of Natural Resources

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Great Lakes Creel Survey Catch Record

Form 3600-145 (R 7/02)

Survey Site: Menomonee River | County: | Clerk:

Date (MM/DD/YYYY): 03-28-18 | County Code (2 digits): | Survey Site Code (3 digits): | Fishery Type: ☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address
N09	.	366	LV	63624	R	1
		345		63583	G	2
	T	434		63604	R	1
N09		480		63484	G	2
		500		63481	G	2
		515		63451	R	2
		430		63461	R	1
		496		63262	RECAP	
		360		63488	R	1
		485		63460	R	2
		440		63489	R	1
	D-VENT	456		63445	U	3
		475		63458	R	1
		500		63457	U	3
	T	442		63456	R	1
	T	428		63485	R	1
I19	NC L	456		63472	R	1
I19	NC	637		—	S	2
N09		430		63450	R	2
	T	450		63469	R	1
	RECAP TODAY	—		63261	—	—
	RECAP TODAY			63621		
	D	452		63475	U	3
		469		63486	G	2
		410		63470	R	1
		367		63491	R	1

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address
N09	.	465	LV	63466	G	2
I19	L NC	715		63455	R	2
N09		399		63492	R	1
		461		63473	G	2
		420		63453	R	1
		370		63483	R	1
N09		530		63586	G	2
	T	472		63595	G	2
	RECAP TODAY			63244		
	T	473		63596	G	2
	RECAP LAST YEAR	495	3/29 2017	FLOY-YELLOW 3380	R	63597 1
		386		63582	R	1
		438		63594	R	1
	RECAP LAST YR	40?		FLOY 2805 63490	R	1 COOK UP
		468		63607	R	1
		476		63454	G	2
		441		63468	G	1
		452		63476	G	2
		464		63479	U	3
		420		63465	R	1
		521		63606	G	2
		476		63593	G	2
		415		63603	G	2
		385		63588	G	2
		411		63601	G	2
		441		63602	R	1

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3/ **Great Lakes Creel Survey Catch Record**
Form 3600-145 (R 7/02)

Survey Site	County	Clerk

Date (MM/DD/YYYY)	County Code (2 digits)	Survey Site Code (3 digits)	Fishery Type
03/28/2018			☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description			Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description		
				Number	Color	Address					Number	Color	Address
NO9	.	423	LV	63589	R	1	NO9	.	472	LV	63545	G	2
	T	475		63600	G	2		T	478		63539	G	2
	T	456		63592	G	2		T	465		63543	G	2
		426		63612	R	1			405		63530	G	2
	T	445		63590	R	1		Lesion	471		63526	R	1
		466		63584	G	2		bad left eye, gill cover	461		63537	G	2
		456		63625	R	1			388		63517	R	1
		457		63585	G	2		RECAP TODAY			63589		
		370		63587	R	1			466		63534	G	2
		358		63581	R	1		RECAP TODAY			63595		
		366		63609	R	1			418		63518	R	1
		384		63599	R	1		RECAP TODAY			63461		
		350		63580	R	1			400		63598	R	1
		340		63611	R	1		RECAP TODAY			63491		
		425		63522	G	2		T	412		63547	G	1
	T	409		63542	R	1			415		63591	G	2
		440		63541	R	1			399		63616	G	2
		456		63531	R	1			362		63521	G	1
	T	485		63532	G	1		RECAP TODAY			63483		
		526		63538	G	2	Golden N DH		417		63523		
		513		63536	G	2		T	470		63527	G	2
		511		63540	G	2		T	503		63398	G	2
		393		63528	R	1			532		63399	G	2
	eroded fins	521		63525	G	2		T	484		63393	G	2
		517		63520	G	2			421		63535	R	1
		421		63546	S	1		T	450		63524	G	2

State of Wisconsin
Department of Natural Resources

4/

Great Lakes Creel Survey Catch Record

Form 3600-145 (R 7/02)

Survey Site	County	Clerk

Date (MM/DD/YYYY)	County Code (2 digits)	Survey Site Code (3 digits)	Fishery Type
03/28/2018			☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description			Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description		
				Number	Color	Address					Number	Color	Address
NO9	T.__	497	LV	63401	G	2	NO9	T.__	508	LV	63417	G	2
		402		63404	G	2		eroded fins, T	510		63439	G	2
		444		63407	G	1		T	468		63419	G	2
	RECAP TODAY			63456				missing left eye	422		63434	G	1
		450		63397	G	2			448		63403	R	1
		403		63430	R	1		T	400		63409	R	1
		496		63529	G	2		T	523		63392	G	2
		475		63544	G	2			397		63141	G	2
		382		63533	R	1			522		63114	G	2
		479		63400	G	2			416		63113	R	1
		438		63396	G	1			481		63116	G	2
	disease?	511		63448	G	2		T	466		63110	R	1
	lesion, eroded fins	404		63394	R	1		fungus?	403		63157	R	1
		505		63410	G	2		T	470		63133	G	2
		454		63405	R	m(1)			493		63139	G	2
		440		63411	R	1		hemorrhagic	439		63124	G	2
		383		63442	G	2			410		63142	G	2
		460		63402	S	1		T	448		63131	R	1
	T	491		63412	G	2			474		63128	G	2
		368		63408	R	1			405		63123	R	1
	T	425		63391	R	1		T	430		63137	S	1
		424		63413	G	1			395		63159	R	1
		533		63446	S	2		T	412		63118	R	1
		394		63416	G	2	I19	NO PIT		ARV		R	1
	T	492		63406	G	2	NO9	T	435	LV	63169	R	1
	worms	470		63395	G	1			425		63135	G	2

State of Wisconsin
Department of Natural Resources

5/

Great Lakes Creel Survey Catch Record

Form 3600-145 (R 7/02)

Survey Site	County	Clerk

Date (MM/DD/YYYY)	County Code (2 digits)	Survey Site Code (3 digits)	Fishery Type
03/28/2018			☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description			Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description		
				Number	Color	Address					Number	Color	Address
NO9	__.__	405	LV	63174	R	1	___	__.__	____	__	_____	__	__
	T	485		63160	G	2							
eroded fins	+ T	463		63129	R	1							
	T	489		63206	G	2							
		404		63119	G	2							
	T	451		63126	R	1							
	T	502		63205	G	2							
	disease?	545		63103	G	2							
		488		63117	G	2							
		485		63132	G	2							
		484		63121	R	1							
		502		63115	G	2							
		366		63122	R	1							
		404		63120	G	2							
		480		63226	G	2							
	T deformity	412		63237	R	1							
		450		63182	G	2							
	T	409		63198	R	1							
		385		63228	G	2							

State of Wisconsin
Department of Natural Resources

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Great Lakes Creel Survey Catch Record
Form 3600-145 (R 7/02)

Survey Site	County	Clerk
Menomonee River		

Date (MM/DD/YYYY)	County Code (2 digits)	Survey Site Code (3 digits)	Fishery Type
04-05-18			☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description: Number	Color	Address
N09	.	502	GF	72080		
N09		379	RM	63355		
		471	RM	63341	T	
		429	RM	63332	T	
		431	RM	63357		
		518	GF	63320		
		464	GF	63365		
		513	GF	63354		
		456	RM	63353		
		430	GF	63367		
		446	GM	63335		
		400	GF	63358		
		484	RM	63376		
		461	GF	63327		
		374	RM	63363		
		372	GM	63322		
		475	GF	63330		
		347	RM	63324		
		363	RM	63368		
		424	RM	63334		
		481	GF	63337		
		423	RM	63347		
		408	RM	63362		
		345	RM	63341		
		364	RM	63359		
		524	GF	63366	T	

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description: Number	Color	Address
N09	.	422	RM	63360		
N09		469	RM	63331		
		474	GF	63336		
		482	GF	63364		
		469	RM	63370	T	
		512	RF	63369		
		505	GF	63356		
		521	GF	63179	T	
		521	GF	63135		
		466	RM	63190	T	
		446	RM	63199		
		492	RM	63189		
		430	RM	63173		
		457	RM	63167	T	
		494	RM	63195		
		477	GF	63194		
		456	RM	63134		
		482	GF	?		
		471	GF	63202		
		423	RM	63201		
		474	GF	63193	T	
		499	GF	63175		
		448	RM	63125		
		450	GF	63127		
		443	RM	63164		
		429	RM	63130	T	

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Great Lakes Creel Survey Catch Record
Form 3600-145 (R 7/02)

Survey Site	County	Clerk
Menomonee River		

Date (MM/DD/YYYY)	County Code (2 digits)	Survey Site Code (3 digits)	Fishery Type
04-05-18			☐ Ramp 1 ☐ Pier 2 ☐ Shore 3 ☐ Stream 4 ☐ Ice 5

Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address	Species	Weight (kg)	Length (mm)	Fin Clip	Tag Description Number	Color	Address
NOG	.	440	RM	63196			NOG	.					
		470	RM	63181		T			399	RM	63316		
		480	RM	63191		T			481	GF	63309		
		433	RM	63203					490	SF	63319	T	
		523	GF	63171		T			415	SF	63312		
		496	RM	63204									
		547	GF	63140									
		485	GF	63183		T							
		454	GF	63168	1	T							
		463	RM	63136		T							
		491	GF	63188		T							
		409	GF	63192									
		449	RM	63172									
		361	RM	63292									
		476	GF	63306									
		467	RM	63303									
		457	GF	63297									
		374	GF	63288									
		482	RM	63294									
		477	GF	63310									
		504	GF	63318									
		444	RM	63298		T							
		525	GF	63314		T							
		497	GF	63307									
		400	RM	63313									
		494	GF	63302									

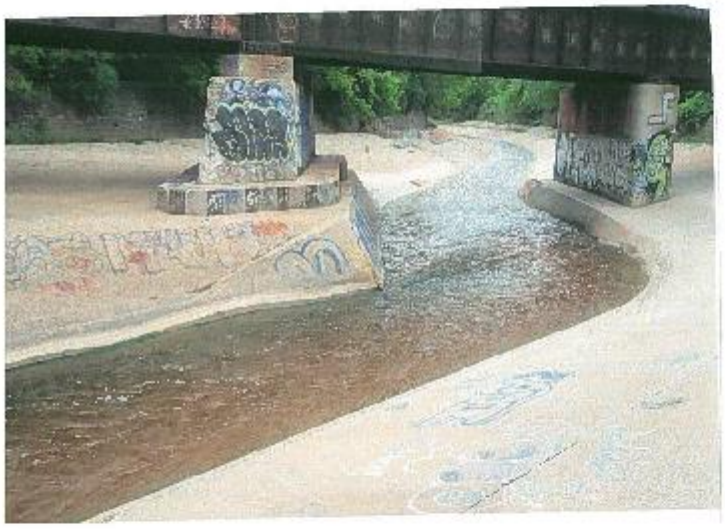
Figure 15 - Photograph Documentation

PHOTO CARD

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P7022289
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	North end of project
Comment	Pre-Con survey

Click Above to Add Image



Picture Number	P7022290
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	North end of project
Comment	Pre-Con survey

Picture Number	P7022291
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	North end of project
Comment	Pre-Con survey

Click Above to Add Image

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P7022298
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	South of RR @ east side
Comment	Pre-Con survey

Picture Number	P7022299
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	South of RR @ west side
Comment	Pre Con survey

Picture Number	P7022300
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	South of RR @ east side
Comment	Pre-Con survey

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P7022328
Project	Menomonee River Streambank
Contract Number	W2002 1C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	At Wis. bridge @ west side
Comment	Pre-con survey

Click Above to Add Image

Picture Number	P7022329
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	At Wis. bridge @ east side
Comment	Pre-con survey

Picture Number	P7022330
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	At Wis. bridge @ west side
Comment	Pre-con survey

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

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Picture Number	P7022331
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	At Wis. bridge @ west side
Comment	Pre-con survey

Picture Number	P7022332
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	At Wis. bridge @ east side
Comment	Pre-con survey

Picture Number	P7022333
Project	Menomonee River Streambank
Contract Number	W20021C01
Date Taken	Jul 2, 2013
Taken By	M.Pospyhalla
Location	Downstream of south limits
Comment	Pre-con survey

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P8190827
Project	Menomonee River Mgmt.
Contract Number	W20021C01
Date Taken	Aug 19, 2013
Taken By	M.Pospyhalla
Location	Sta 12114.50
Comment	Repair of WPA wall

Picture Number	P8190828
Project	Menomonee River Mgmt.
Contract Number	W20021C01
Date Taken	Aug 19, 2013
Taken By	M.Pospyhalla
Location	Sta 13188
Comment	Repair of WPA wall

Picture Number	P8190829
Project	Menomonee River Mgmt.
Contract Number	W20021C01
Date Taken	Aug 19, 2013
Taken By	M.Pospyhalla
Location	Disposal site 1A
Comment	24" pump in cage

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

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Picture Number	P8200835
Project	Menomonee River Mgmt.
Contract Number	W20021C01
Date Taken	Aug 20, 2013
Taken By	M.Pospyhalla
Location	West gr. beam@canoe launch
Comment	32" HDPE pipe extended along west grade beam;

Picture Number	P8200836
Project	Menomonee River Mgmt.
Contract Number	W20021C01
Date Taken	Aug 20, 2013
Taken By	M.Pospyhalla
Location	South of Bluemound bridge;
Comment	Trying to push 32" pipe along west grade beam;

Picture Number	P8200837
Project	Menomonee River Mgmt.
Contract Number	W20021C01
Date Taken	Aug 20, 2013
Taken By	M.Pospyhalla
Location	South of Bluemound bridge;
Comment	Securing 32" HDPE pipe along grade beam;

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P9040908
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 4, 2013
Taken By	M.Pospyhalla
Location	East side @ N of RR
Comment	Concrete demo;

Picture Number	P9040909
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 4, 2013
Taken By	M.Pospyhalla
Location	East side @ N of RR
Comment	Concrete demo;

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Picture Number	P9040910
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 4, 2013
Taken By	M.Pospyhalla
Location	East side @ N of RR
Comment	Concrete demo;

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P9050923
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 5, 2013
Taken By	M.Pospyhalla
Location	Discharge area
Comment	24' discharge pipe

Click Above to Add Image

Picture Number	P9050924
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 5, 2013
Taken By	M.Pospyhalla
Location	West side @ N of RR
Comment	Demo of concrete slope;

Picture Number	P9050925
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 5, 2013
Taken By	M.Pospyhalla
Location	North of RR
Comment	Off-road hauler used for conveying concrete demo out of channel;

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P9120965
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 12, 2013
Taken By	M.Pospyhalla
Location	Sta 22+05
Comment	Void under grade beam producing water;

Picture Number	P9120966
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 12, 2013
Taken By	M.Pospyhalla
Location	N of RR @ West side
Comment	Preparing subgrade;

Picture Number	P9120967
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 12, 2013
Taken By	M.Pospyhalla
Location	Sta 23+07 @ West side
Comment	Existing granular backfill with clay below;

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P9140980
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 14, 2013
Taken By	M.Pospyha.la
Location	East end of Disposal site 1A
Comment	Generators and lighting placed;

Click Above to Add Image

Picture Number	P9140981
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 14, 2013
Taken By	M.Pospyhalla
Location	N of RR; west side
Comment	Mass concrete forms and rebar;

Picture Number	P9140982
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Sep 14, 2013
Taken By	M.Pospyhalla
Location	N of RR; west side
Comment	#7 rebar drilled into granite beam; two mats converge to one mat of bars;

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	PA011065
Project	Menom. River Management
Contract Number	W2002 1C01
Date Taken	Oct 3, 2013
Taken By	M.Pospyhalla
Location	N of RR
Comment	Poured mass concrete w/ riffle anchor;

Picture Number	PA011066
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Oct 3, 2013
Taken By	M.Pospyhalla
Location	Riffle Anchor #11
Comment	GCB II stone being placed around base of foundation;

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Picture Number	PA011067
Project	Menom. River Management
Contract Number	W20021C01
Date Taken	Oct 3, 2013
Taken By	M.Pospyhalla
Location	Diversion Area
Comment	Black water coming from upstream outlet into diversion area;

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	PB151181
Project	Menom. River Project
Contract Number	W20021C01
Date Taken	Nov 15, 2013
Taken By	M.Pospyhalla
Location	S end of RR
Comment	Recently poured riffle anchor #9;

Click Above to Add Image

Picture Number	PB151182
Project	Menom. River Project
Contract Number	W20021C01
Date Taken	Nov 15, 2013
Taken By	M.Pospyhalla
Location	Riffle # 8
Comment	Forms removed from concrete pour of riffle anchor #8;

Picture Number	PB151183
Project	Menom. River Project
Contract Number	W20021C01
Date Taken	Nov 15, 2013
Taken By	M.Pospyhalla
Location	S of RR @ east side
Comment	Placing GCB II stone;

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P9081744
Project	Menomonee River Project
Contract Number	W20021C01
Date Taken	Sep 8, 2014
Taken By	M. Pospyhalla
Location	Sta 18+46 to 17+87
Comment	Streambed liner being placed in excavated channel;

Picture Number	P9091745
Project	Menomonee River Project
Contract Number	W20021C01
Date Taken	Sep 9, 2014
Taken By	M. Pospyhalla
Location	North of Marsh
Comment	Setting up grout pump;

Click Above to Add Image

Picture Number	P9091746
Project	Menomonee River Project
Contract Number	W20021C01
Date Taken	Sep 9, 2014
Taken By	M. Pospyhalla
Location	Sta 18+77 to 17+75
Comment	Early morning ponding in channel due to Miller discharge overnight;

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

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Picture Number	P9171753
Project	Menomonee River Project
Contract Number	W2002IC01
Date Taken	Sep 17, 2014
Taken By	M. Pospyhalla
Location	Downstream of RAP#5
Comment	Grouting boulders;

Picture Number	P9181754
Project	Menomonee River Project
Contract Number	W2002IC01
Date Taken	Sep 18, 2014
Taken By	M. Pospyhalla
Location	Rap #4
Comment	1' gravel base for RAP foundation due to sloppy subgrade;

Picture Number	P9181755
Project	Menomonee River Project
Contract Number	W2002IC01
Date Taken	Sep 18, 2014
Taken By	M. Pospyhalla
Location	View Upstream at RAP#4
Comment	Concrete pour of RAP w/ pump truck;

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MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

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Picture Number	P3241991
Project	Menomonee River Project
Contract Number	W20021C01
Date Taken	Mar 24, 2015
Taken By	M.Pospyhalla
Location	East side of marsh looking north
Comment	New gravel path placed;

Picture Number	P3241992
Project	Menomonee River Project
Contract Number	W20021C01
Date Taken	Mar 24, 2015
Taken By	M.Pospyhalla
Location	West side of marsh
Comment	Cutting in new path;

Picture Number	P3241993
Project	Menomonee River Project
Contract Number	W20021C01
Date Taken	Mar 24, 2015
Taken By	M.Pospyhalla
Location	Sta 14+75
Comment	Access ramp to channel for COE project;

PHOTO CARD

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

Picture Number	P5052179
Project	Menomonee River Stream M[redacted]
Contract Number	W20021C01
Date Taken	May 5, 2015
Taken By	M.Pospyhalla
Location	Upstream of RAP#7;
Comment	Existing river conditions;

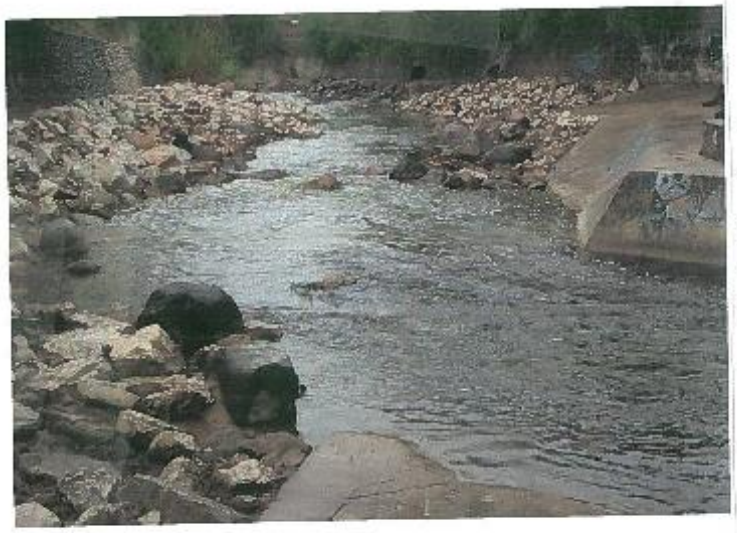
Picture Number	P5052180
Project	Menomonee River Stream M[redacted]
Contract Number	W20021C01
Date Taken	May 5, 2015
Taken By	M.Pospyhalla
Location	Upstream of RAP#7;
Comment	Existing river conditions;

Picture Number	P5052181
Project	Menomonee River Stream M[redacted]
Contract Number	W20021C01
Date Taken	May 5, 2015
Taken By	M.Pospyhalla
Location	Downstream of RAP#5;
Comment	Existing river conditions;

Click Above to Add Image

PHOTO CARD

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT



Picture Number	P5052187
Project	Menomonee River Stream Mg
Contract Number	W20021C01
Date Taken	May 5, 2015
Taken By	M.Pospyhalla
Location	Downstream of RAP#5;
Comment	Existing river conditions;

Picture Number	P5052183
Project	Menomonee River Stream Mg
Contract Number	W20021C01
Date Taken	May 5, 2015
Taken By	M.Pospyhalla
Location	Upstream of RAP#10;
Comment	Existing river conditions;

Picture Number	P5052184
Project	Menomonee River Stream Mg
Contract Number	W20021C01
Date Taken	May 5, 2015
Taken By	M.Pospyhalla
Location	Under RR Abutment;
Comment	Tree hung up at abutment;

Click Above to Add Image